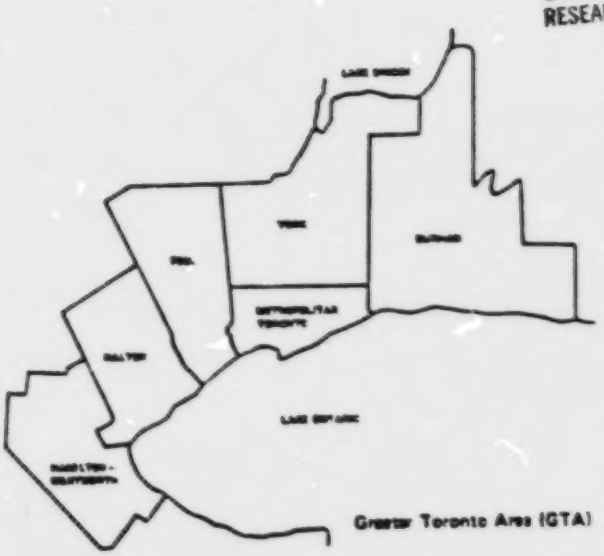
GREATER TORONTO AREA

Common Perspectives Study

URBAN DOCUMENTATION CENTRE
RESEARCH UNIT FOR URBAN STUDIES
McMASTER UNIVERSITY
HAMILTON, ONTARIO



Greater Toronto Area (GTA)

006112

GREATER TORONTO AREA: Common Perspectives Study

TABLE OF CONTENTS

		PAGE
	INTRODUCTION	1
I	HISTORICAL DEVELOPMENT PATTERNS IN THE GTA AND FACTORS INFLUENCING ITS DEVELOPMENT	3
	A. Factors Influencing Growth of the GTA	3
	1. Employment and Immigration	3
	2. Fertility Rates and Age Structure	5
	3. Household Size	6
	4. Economic Factors	7
	5. Built Environment	9
	B. Factors Influencing Growth Distribution within the GTA	10
	1. Toronto Core and Land Values	10
	2. Housing Market	11
	3. Automation and Communications Technology	12
	4. Energy Prices	13
	5. Infrastructure	14
	6. Travel Patterns	14
II	THE FUTURE OUTLOOK	16
	A. Population Forecasts	17
	B. Economic Forecasts	18
	C. Growth Distribution within the GTA	20
III	ANALYSIS AND COMPARISON OF REGIONAL MUNICIPALITIES' OFFICIAL PLANS	23
	A. Relative Growth Rates	23
	B. Population	24
	C. Employment	25
	D. Land Use Patterns	27
	E. Zoned Acreages and Densities	28
	F. Implications Regarding Planning Targets	29
IV	THEORETICAL SCENARIO "MODELS"	32
V	CONCLUSIONS	39
	APPENDIX I - Exhibits	

APPENDIX I

EXHIBIT 1	Historical Net Migration - Ontario 1961-1981
EXHIBIT 2	Manufacturing Establishments and Employment 1971-1979
EXHIBIT 3	GTA Area Labour Force 1961-1971
EXHIBIT 4	Past and Projected Fertility Rates, Province of Ontario
EXHIBIT 5	Metropolitan Region Natural Increase and Net Migration - 1951-1981
EXHIBIT 6	Household Size by Regional Municipality 1961-1981
EXHIBIT 7	Household Size Trends 1961-1981
EXHIBIT 8	Greater Toronto Area - Percentage Growth in Population and Households, 1961-1981
EXHIBIT 9	Ontario Personal and Personal Disposable Income Per Capita, 1961-1981
EXHIBIT 10	Ontario Gasoline Prices: Historical
EXHIBIT 11	Ontario Gasoline Prices: Projected
EXHIBIT 12	Total Households, Six Central Areas, Quinquennially, 1561 Plus
EXHIBIT 13	Trends in GTA Dwelling Unit Mix 1971-1981
EXHIBIT 14	Dwelling Starts and Completions for the Six Regional Municipalities, Annually, 1976-1981
EXHIBIT 15	Dwelling Unit Starts and Market Share 1976-1981, by Regional Municipality
EXHIBIT 16	House Prices (April 1982) for Selected Area Municipalities
EXHIBIT 17	1981 Industrial Locations and Representative Land Prices

EXHIBIT 18	Servicing Implications of Population Growth by Regional Municipality
EXHIBIT 19	1980 Built Up Area
EXHIBIT 20	Greater Toronto Area Highway System
EXHIBIT 21	Openings of New Facilities, 1956 - 1982
EXHIBIT 22	Major Transportation Facilities in the Toronto Area
EXHIBIT 23	1971 Census Journey to Work - Persons by Place of Residence and Place of Work
EXHIBIT 24	1971 & 2000 Relative Distribution of Home to Work Trips
EXHIBIT 25	Inbound Cordon Count Trends: 1975-1981 (7:00 a.m. - 7:00 p.m. Volumes)
EXHIBIT 26	Vehicle Occupancy 7-9 a.m. (Inbound) at Selected Metro Toronto Cordons
EXHIBIT 27	Modal Split 7-9 a.m. (Inbound) at Selected Metro Toronto Cordons
EXHIBIT 28	Average Trip Length Variation 1956-1979
EXHIBIT 29	Passenger Auto and Passenger Auto Per Capita - Metro Toronto
EXHIBIT 30	GO Rail - Regional Usage, 1975-1981
EXHIBIT 31	Historical/Projected GTA Population 1951, '61, '71, '81, Estimates 2001
EXHIBIT 32	Existing GTA Population Projections
EXHIBIT 33	GTA Employment Projections
EXHIBIT 34	Range of Future GTA Populations and Employment Projections
EXHIBIT 35	Regional Municipality Share of GTA Employment - 1971, 1981 & 2001
EXHIBIT 36	Regional Employment Comparisons: 1971-2001

EXHIBIT 37	Historical Population Shares, 1951, 1961, 1971 and 1981
EXHIBIT 38	Regional Population Comparisons: 1961-2001
EXHIBIT 39	Projected Share of Population (Yr. 2001)
EXHIBIT 40	Summary of Relative Growth Shares
EXHIBIT 41	Regional Land Use Comparisons: Current and 2001
EXHIBIT 42	Future Designated Land Use
EXHIBIT 43	Regional Development Density Comparisons: Current and 2001
EXHIBIT 44	Housing Implications of Population Growth According to Regional Official Plan by Regional Municipality
EXHIBIT 45	Regional Population, Employment, Labour Force
EXHIBIT 46	GTA Growth Scenarios - Qualitative Descriptions
EXHIBIT 47	GTA Growth Scenarios - Broad Quantification (2001)

GREATER TORONTO AREA: COMMON PERSPECTIVES STUDY

INTRODUCTION

This report was initiated by the Toronto Area Liaison Committee (TALC). TALC was formed in 1981 to facilitate the co-ordination of inter-regional planning and transportation initiatives and actions in the Greater Toronto (GTA) Area and to provide a forum for the representatives of the six Regional Municipalities making up the Greater Toronto Area - Durham, York, Peel, Halton, Hamilton-Wentworth and Metro Toronto - to discuss mutual concerns with representatives from the Ministries of Municipal Affairs and Housing and Transportation and Communications. Membership on TALC includes senior officials of the two ministries plus the Planning Commissioners and/or Directors of Transportation of the six regional municipalities.

Early in 1982, TALC members recognized the need to have a common perspective and data base on past and present development factors in the GTA as a basis for discussing future development trends. Members identified a need to assemble existing data from each Region and, where possible, to present this data in a form which was comparable and consistent from one Region to the next. A consulting firm, IBI Group, was hired to assist the Committee in its task.

This report pulls together the working reports prepared by Neal Irwin of IBI Group in consultation with TALC members. It assembles and documents existing data (historic, current and projections) as a basis for assessing possible future development rates and patterns for the Greater Toronto Area and their implications for infrastructure and other elements of government policy. The report is intended as an information document and does not, in any way, purport to establish policy, future directions or long term growth strategies for the GTA.

The study was initiated, in part, to help overcome problems of reliability, incompatibility and inconsistencies in data from one Region to the next and from one data collection year to the next. The results are not, however, totally perfect. The usual factors which affect reliability and comparability of research data - measurement errors, differences in definitions and sources, collection time discrepancies and geographic boundary differences brought about by political

administrative boundary changes over time - are all pertinent to the data in this report. Readers are cautioned that the data should be reviewed bearing in mind these weaknesses. In this regard, readers should pay particular attention to the footnotes accompanying the data tables and charts.

The report presents available data relevant to past development for the six Regional Municipalities (RMs) comprising the Greater Toronto Area and then goes on to provide an understanding of this data. Included is an analysis of the key factors influencing past development, both of the GTA and within the GTA.

The report also analyses past and current forecasts and estimates for the GTA prepared by various agencies, comments on the current appropriateness of these estimates and evaluates and compares the provisions in the official plans for the six Regional Municipalities in the context of recent trends in the economy and demographic profiles. The report identifies, at regional and inter-regional scales, some of the gaps, conflicts, inconsistencies and potential overlap among the various official plans and growth projections now available, and provides an interpretation of the interplay between development factors. The report also develops a number of theoretical development scenarios and growth levels, using different development variables, and broadly examines the implications of each in terms of major new infrastructure requirements.

The emphasis has been placed on understanding the present development patterns, their strengths and weaknesses and understanding the interplay of development factors and the consequent range of future development scenarios possible in the GTA, along with an evaluation of their impact and implications.

I HISTORICAL DEVELOPMENT PATTERNS IN THE GTA AND FACTORS INFLUENCING ITS DEVELOPMENT

The greater Toronto Area

The GTA is Canada's largest metropolitan area. It has a diversified economic base with relatively high paid manufacturing jobs which, through economic multiplier effects, create a cascade of other primary, secondary and tertiary/quaternary jobs. It is a financial and business service centre and is the professional and government administrative centre for Ontario and much of Canada. It is noted internationally as a desirable place to live and work. In addition to its diversified economic base, it has an attractive topography and climate, plentiful supplies of water, energy and other natural resources, good government, a highly trained labour force and a clean, safe and attractive urban environment. It also has a prosperous hinterland and is in close proximity to attractive vacation land.

The growth and development of the GTA, like any other major centre, is influenced by economic growth, net migration and demographics, land and housing prices, energy prices and availability and automation and communications technology - acting both individually and with each other. As a national centre, the GTA's growth depends not only on growth generated internally but also on growth in primary employment outside the GTA.

In order to gain an understanding of the prospects for the GTA, one needs to look at factors affecting the growth of the GTA itself and factors influencing the distribution of that growth within the GTA.

A. Factors Influencing Growth of the GTA

1. Employment and Immigration

Industrialization, spurred by the Second World War, laid the framework for steady growth of manufacturing employment during the subsequent three decades, with particular emphasis on the automotive industry, electrical and electronics industries and related technological/manufacturing activities. Canada's relatively open immigration policies during most of that period, coupled with the economic and other attractions of the GTA, led to a substantial growth in immigration. For many years, the GTA attracted almost

half of Canada's foreign immigrants, increasing the population base, contributing industrial and professional skills and precipitating further growth in service industries to serve this expanding population. As shown in Exhibit 1, net migration into Ontario was consistently quite high during most of the 1960's and early 1970's, fell to a lower level during the mid-1970's and has plummeted to negative values (i.e. net out-migration) during the past few years. The GTA itself was a strong magnet to migrants from other countries, attracting roughly 45% of them during the 1950s and 60s. During the decade 1971 to 1981 however the average annual net in-migration to the GTA was much lower.

Similar to the recent reversal of immigration trends, the GTA has suffered from the severe economic downturn affecting most parts of Canada during the early eighties. One means of measuring economic activity is to look at employment trends - both employment and labour force statistics. Employment data from one decade to the next (1971 and 1981) gives an overall 1971 to 1981 trend but does not include comparable quantification. (The data from Statistics Canada for 1981 is not compatible with 1971 data across the GTA because of boundary changes which took place in some of the Regions in the intervening time period.) Since there is no consistent trend information for this variable and specific data in the intervening years is not available, analysis of the impacts of the last few years' economic problems which have affected major industries in the area (eg. automotive and farm implements manufacturing) is not possible. Exhibit 2 does give some information on manufacturing and employment activity in the GTA from 1971 to 1979.

Labour force participation rates which measure the proportion of the population age 15 or older which is employed or actually seeking employment, are another measure of economic activity and growth. The rate has been climbing during the past few decades from percentages in the mid forties in 1971 to the low fifties in 1981 - reflecting rapid entry of women into the labour force and the impact of the baby boom in raising the proportion of the total population who are of working age.

Information on the labour force participation rates is not readily available but Exhibit 3 makes some attempt to give comparable statistics across the GTA. There is also a substantial range of uncertainty in the employment data, both participation and employment rates, related to the definition of a job (i.e. the extent to which part-time employment is included or not. If 1971 employment data includes part-time employment, but 1981 does not, and/or the estimates are not consistent from one Region to the next, this obviously has significant implications for comparing data from one Region to the next and one period to the next).

As noted earlier, as a national centre the GTA's growth depends on growth in primary employment outside the GTA as well as internal growth. If other parts of Canada, such as the three Western Provinces, are achieving substantial economic growth, this can detract from industrial prospects in Ontario, draw job seekers away from the Province and result in low, zero or even negative net migration. Positive net migration is likely to be high when the GTA is experiencing good economic growth. Net migration has dropped from levels in excess of 70,000 net migrants to Ontario during much of the 1960's and early 1970's to a net out-migration in excess of 5,000 people in 1981, reflecting a slowing of economic activity in Ontario and the GTA relative to other parts of Canada.

2. Fertility Rates and Age Structure

Apart from economic and demographic influences external to but affecting growth in the GTA, there are obvious demographic factors at work within the area which affect growth e.g. fertility rates. Fertility levels dropped to low levels during the 1930's and rose to high levels following World War II. High levels were sustained for the next twenty years (see Exhibit 4). In contrast to the high fertility rates experienced during the 1940's and 1950's, fertility rates dropped dramatically since 1961, and virtually all population projections made during the past few years have assumed low fertility rates reflecting the assumption that working women, improved birth control and related factors will continue to lead to smaller families.

Exhibit 5 shows the relative components of growth attributed to natural increase or fertility and net migration in the metropolitan region of the GTA. Net migration was of obvious significance to the growth of the GTA prior to 1971. Since then, natural increase has been responsible for a greater proportion of growth.

Another important demographic factor affecting development is the inexorable aging of the population as the "baby boom" moves through middle age to old age. This will contribute to stabilization and likely decline of labour participation rates (labour force divided by total population) as saturation occurs in the number of working women and older members of the work force retire in greater numbers. In addition, it will influence patterns in housing choice, size and location, as well as general travel patterns. This is discussed more fully below.

3. Household Size

Demographics should also be looked at from the aspect of household size and formation since this in turn affects housing starts which have an obvious direct bearing on other economic activity. As shown in Exhibits 6 & 7, the average person per household in the GTA has dropped from over 3.8 in 1961 to less than 2.8 in 1981. This trend has been attributed to a number of factors including aging of the population (resulting in an increased number of single, elderly people living alone), and an increasing number of single-parent families and childless couples (resulting in reduced household sizes and increased number of actual households). A comparison of the percentage change in total population and housing requirements as shown in Exhibit 8 clearly indicates the effect that reduction in household size can have. The household change far exceeds the population increase.

While an increase in number of households usually results in increased housing starts to meet demand, the trend towards smaller household size and increased number of households cannot be considered in isolation from the potential recurrence of the counterbalancing trend experienced during the 1940's and early 1950's of the "doubling up" of households. This trend results from high house prices and low disposable incomes - unmarried children who

previously moved out into apartments continue to live with their parents for some time and children continue, even after marriage, to live with their parents because young people forming families are less able to afford the purchase of a home.

4. Economic Factors

The effects of mortgage rates, personal disposable income per capita and land prices are significant for the housing industry and the economy generally. Past experience indicates that as mortgage rates rose, large market segments were unable to afford to purchase a home or were unable to continue to carry a mortgage on an existing home. As productivity growth has stagnated and wage/salary increases have been eaten up by growing inflation, personal disposable incomes in Ontario have been virtually stagnant. Exhibit 9 shows Ontario residents had been accustomed to annual increases in real disposable income in the range of 2 - 6% per year but the lack of real income growth during the past several years has led to a much more pessimistic outlook by the consuming public leading to a severe slump in the housing market (and very high saving rates and hard times for the retail industry dealing in large expenditure items). Real income levels have been stagnant during much of the past decade, which, in turn, has affected consumer demand, homeownership and a variety of economic and social variables.

Demand for housing is important but affordability, including monetary incentives and initiatives, are also significant. The availability and cost of money influences housing construction rates and land prices affect densities and the distribution of growth.

The price of energy also can have a substantial impact on growth - both settlement patterns and economic activity. While prior to the late 1970's energy prices were not a major influencing factor on growth in the GTA, it is well known that the interruption of gasoline supplies experienced in various parts of the United States in 1979 had a substantial impact on commuting behaviour, leading to increased use of carpools and public transit and a propensity to locate closer to one's job, if possible.

The current instability of energy prices causes economic uncertainty. As shown in Exhibit 10, after a prolonged period of stability in real terms during the 1960's and 1970's gasoline prices in Ontario have increased significantly during 1981 and 1982 as Canada moved towards world prices under its National Energy Program. There is considerable uncertainty as to future gasoline prices. Current over-supplies of petroleum, a lack of cohesion in the OPEC oil cartel, and the prospect that substantial new sources of oil will be brought on stream during the coming decade in Canada and other countries point to a possibility that gasoline prices will remain relatively constant in real terms (the low trend shown in Exhibit 11). On the other hand, a major war in the Middle East, or other cause for interruption in major petroleum sources, could result in a resumption of real price increases such that the National Energy Program projected price increases (the high trend shown in Exhibit 11) might be experienced.

The real significance of overall energy prices for the GTA relates both to distribution and density of development within the GTA (perhaps of the greatest significance) and the actual development which takes place in the GTA. Up until now, energy prices do not seem to have had much effect on development in the GTA. In the short term, smaller cars seem to have been the only effect. In the long term, however, high energy prices for transportation fuel could have a negative impact on exurban development and contribute to higher densities in existing built up areas.

On the other hand, high energy prices could have the more profound effect of getting the Canadian economy moving again by allowing various energy mega-projects to proceed. This would contribute to the growth of jobs (e.g. for manufacturing pipeline materials/components in Hamilton), which would lead to increased economic growth and income in the GTA. If this growth were large, it might compensate in part, or completely, for the higher fuel prices (through higher real incomes and greater development pressures) such that exurban development would take place regardless of the fuel price increases. However, if the revival of energy mega-projects in Canada's west were relatively modest, additional GTA growth could be quite small. In fact, partial revival of the Alberta and British Columbia economies might lead to increased net out-migration from Ontario to the west.

5. Built Environment

Exhibits 12 through 18 present infrastructure data on dwelling units (including a breakdown of singles as a percentage of total stock), housing starts, house prices, industrial land prices, servicing capacities of trunk water and sewage facilities. The house price data plus the available industrial land price data provide some basis for assessing future impacts of housing and land prices.

There is a significant gap in the infrastructure data i.e. reliable, specific and comparable existing land use information. 1981 existing land use data are not readily available in tabular and map form. A composite map, Exhibit 19, shows in a very generalized manner existing (1981) built-up areas in the GTA. The land use data provides some basis for understanding current development patterns and future patterns of residential, commercial and industrial uses, including distributions and densities.

Exhibits 20 through 22 show the basic transportation infrastructure both existing and proposed, serving inter-regional travel requirements.

The major public transit facilities (either subways or commuter rail lines) are oriented to the downtown of Toronto. By comparison, the major freeway facilities serve a wide range of destinations both within and external to the GTA.

The implementation dates for major improvements to road and transit facilities are closely related to urban development patterns. The freeway network in Metro was essentially built in 1960's and 1970's when Metro was undergoing extensive growth. Several major freeway projects will be completed in Peel in the 1980's serving the rapid growth in that area.

In general, transportation infrastructure has been provided, as required, in a pattern of concentric circles, radiating outwards from the region's centre. This pattern of concentric circles has been closely related to the development pattern in the region in terms of both timing and extent.

B. Factors Influencing Growth Distribution Within the GTA

The above discusses some of the general factors influencing the overall growth of the GTA. Also pertinent to this study is how the growth that does occur is distributed within the GTA. To a large degree, the same factors influencing the overall growth prospects of the GTA also influence internal growth distribution. Their relative significance and manner of influence may differ and some factors, such as infrastructure and energy prices, may become more significant e.g. these two factors influence growth of the overall GTA but their real significance perhaps relates more to internal distribution.

The major factors considered as likely to impact growth distribution with the GTA to 2001 are: transportation access to the CBD of the GTA in downtown Toronto; land prices/rents throughout the GTA; land ownership patterns and impact of economic conditions/markets on developers' plans; centralizing forces of "doubling-up" and higher fuel prices; decentralizing forces of office/communications technology and automation; and, serviced land capacity constraints. All this assumes no major new government intervention - which, if it were to occur, would obviously have a significant impact on 'normal' trends.

1. Toronto Core and Land Values

Transportation access to the CBD in downtown Toronto and land prices/rents throughout the GTA are perhaps the most significant factors influencing growth distribution in the GTA in the context of the next ten to twenty years. These two factors are closely interrelated. Land prices and rents tend to be highest in a regional core and tend to decline as one moves away from the core. This general pattern holds in the GTA. Activities which require immediate and easy access to other central business activities, such as financial and many types of office/service activities, and major retail centres, will tend to locate in a regional core or major subcentres, while other activities, including industrial and wholesale employment, will tend to locate on cheaper land away from the core. This, in part, explains the industrial migration out of Toronto. The differences in land values

between central core and other locations will have a strong impact on development patterns in the future.

Similarly, for residential development, those to whom a central location is important will pay the higher purchase or rental price for their residence while others will locate on cheaper land in the suburbs either because central access is less important or because they are prepared to trade off higher commuting costs in return for lower housing costs.

Office rents exhibit similar characteristics to industrial land prices. The closer to the centre of the region, the higher the rent. Data for March 1982 indicates the average rent in Toronto's financial core was $351.67 per sq. Metro gross ($32.67 p.s.f.) compared to $148.01 per sq. Metro gross ($13.75 p.s.f.) for suburban locations. This differential has resulted in some centrally located companies decentralizing parts of their operations, such as data processing, to less costly suburban areas. The future availability of and cost for central facilities will greatly influence the pattern of development in non-central areas. Under the assumption of high costs for central locations, most forecasters are projecting that a rapidly increasing share of office development will be distributed throughout the suburbs of Metro and the surrounding municipalities.

2. Housing Market

There are, however, a number of other factors which may modify the basic distribution of growth. Land ownership patterns and the impact of economic conditions/markets on developers' plans obviously have a very strong impact on short term development patterns and decisions. For example, under current market conditions, housing sales are substantially more dependent on the overall price and financing package than on the size and amenities offered - a major difference from the market of several years ago.

Housing construction has been discussed earlier in the context of household formation and resulting housing starts. Household size and formation are also significant in the context of densities and distribution of development within the GTA. The "doubling-up" phenomenon referred to earlier is

another important variable to consider in terms of housing distribution and density.

Land prices are a most important variable since, as noted earlier, they influence development densities, servicing costs and house prices. High land and housing prices, resulting from the sustained demand for new housing until early 1981, contributed to the achievement of higher development densities. Developers required higher densities in order to make a reasonable return in the face of high land costs. As shown in Exhibit 12, there was a steady decline in the proportion of single detached dwelling units relative to all occupied dwelling units in all parts of the GTA over the past decade (by way of example, the proportion fell from 41% in 1971 to 35% in 1981 in Metro Toronto and from 81% to 72% in York Region during the same period). To the extent that depressed economic housing markets result in lower land and housing prices, the economic forces tending to cause higher densities may now be somewhat reduced. Construction of rental units in Ontario has dropped off in recent years (partly as a result of rent control in the Province) and the luxury condominium market, which did seem to be holding up notwithstanding the general housing market conditions, has now become soft. There is new pressure to build and market more single detached units (since these seem to be selling better than attached and multiple units) and there is a trend in some Regions for apartments to come in at lower densities than permissible.

3. Automation and Communications Technology

There has been substantial literature during the past few years on the "revolution" in computer and communications technology, with the development of inexpensive home computers, two-way television (Telidon), inexpensive data telecommunications links and related developments. It is speculated that this could lead to a decentralization of jobs, in part resulting from large firms taking advantage of such communications to locate some office workers in suburban areas where rents are lower - a decentralization of computing facilities away from the downtown Toronto core has already developed - and, in part, resulting from various workers being able to carry out many of their duties in their own homes using computers, word

processors and other equipment which is "wired in" to the office. If such developments were to become widespread, they could contribute to greater decentralization of commercial jobs and a greater propensity for certain people to locate their homes in exurban areas, while making relatively few commuting trips to employment centres. It is very difficult to estimate the extent to which this might occur but the possibility for such trends bears consideration.

4. Energy Prices

The market for new housing in the outer suburban (exurban) areas of the GTA was strengthened during the 1960's and 1970's by relatively low transportation fuel prices which allowed those entering the housing market to buy their first house in peripheral areas, where land and housing prices were relatively low, trading off the higher commuting costs as a means of entering the housing market. As their incomes grew, such persons, if job dependent on the core, often tended to "trade up" - acquiring more expensive housing closer to the regional core and experiencing lower commuting costs as a result. The opposite has also occurred - a demand for more expensive, exclusive housing further removed from the centre particularly as a larger proportion of jobs are locating outside the centre core of Metro.

There probably needs to be a significant increase in fuel costs before those in the higher income brackets find fuel prices affect their decision on the location of housing. If "low" gasoline prices are experienced during the coming decade or two, this could contribute to growth of new housing in exurban areas. If, on the other hand, high gasoline prices are experienced, depending upon the extent of increase, this could be another factor contributing to higher population densities in existing built-up areas and a lower propensity for the market to require and provide new housing in peripheral areas. One response to higher prices has been to acquire improved technology in the form of either fuel efficient cars or energy efficient homes. There have not been fundamental changes in lifestyle i.e. changes in live-work relationships.

5. Infrastructure

The availability of satisfactory infrastructure, particularly hard services, obviously can have a significant bearing on whether or not development occurs within the GTA and where within the GTA. There is a significant gap in infrastructure data. Information on water/sewage trunk facilities (maps showing locations, dates and projected costs) and water/sewage capacities for future years is weak. The CMHC data on population capacity of water and sewage treatment plants/trunks does not cover the entire GTA but hard services are not expected to be a significant factor influencing growth of the GTA in the next two decades. The regional municipalities have provided the data in Exhibit 18. This data indicates that basic facilities are already in place or committed and serviced land capacity constraints are not expected to influence directly the distribution of growth before 2001. Clearly, if such constraints or overall constraints on the availability of new land for development were experienced before 2001, this would directly impact the ability of any one regional municipality to absorb its "share" of regional growth. In the 1970s, the availability of sewers in Peel contributed to Peel's high rate of growth and the concurrent lack of services in such Regions as York and Durham constrained their growth.

6. Travel Patterns

The travel patterns within the GTA are the product of the past growth and distribution of population and employment opportunities as well as the availability of transportation services. The travel patterns are reflected in Exhibits 23 through 30, which show the live-work relationship according to the 1971 Census, a cordon count summary for Metro Toronto modal splits, average trip lengths, auto ownership trends and GO rail usage.

The material basically reflects the observed rapid suburbanization of population into the Regions around Metro Toronto and the predominance of Metro Toronto in terms of employment opportunities. This is borne out by the:

- rapid growth in cordon count volumes
- increasing average trip lengths
- increasing auto ownership patterns
- increased use of transit for cross boundary commuting

II THE FUTURE OUTLOOK

Forecasts for the future of the Greater Toronto Area (GTA) are characterized by a degree of uncertainty. As discussed earlier, economic growth is influenced by world trade, energy prices, Canada's mega projects in energy and the automotive industry. Economic and demographic trends of the 50's, 60's, and early 70's did not continue in the late 70's and early 80's. There are substantial economic uncertainties facing all parts of the world at this time. This results in a disinclination to make long range forecasts.

From the preceeding discussions, it is obvious that the interactions among the factors influencing growth are not simple in nature. Many factors affect overall growth and development of the GTA in a variety of ways depending on the combination in which they occur, as well as their relative intensities.

Foremost among these factors are:

- overall economic growth in the GTA measured in terms of employment and labour force participation rates, real incomes and the mix of jobs (i.e. industrial, office, retail, wholesale etc.);
- net migration into Ontario and the GTA from other countries and parts of Canada;
- the general effects of fertility and other demographic influences such as population/age distribution, family formation;
- impacts of real personal disposable incomes and interest rates on the housing market; and,
- impacts of gasoline prices and automation/communications technology.

In the face of such diverse forces and possibilities, it is extremely difficult and dangerous to project a single growth estimate or target for the GTA as a whole or any of its parts. Rather, a series of alternative scenarios, based upon logical sets of the various factors, can be developed and used as a basis for assessing the range of possible futures and for providing a framework for developing planning strategies and making decisions.

Not considered within the terms of reference of this study (but obviously also of significance) are stimulative financial programs by government. For the purpose of the following analysis, no special new incentives by government have been assumed or considered.

The following material discusses a number of forecasts already prepared and the general expected impact of such factors as technology and energy prices on the general pattern of growth in the GTA. The material then goes on to analyse the projections in the six Regional Municipalities' (RMs) official plans in the context of the economic outlook for the future and then presents four scenario models for purposes of illustrating the interrelationships of the factors influencing growth and development within the GTA.

A. Population Forecasts

In considering the future outlook, a number of population forecasts have been made. Exhibits 31 & 32 show past population trends and serveral alternative population projections to the year 2001 for the GTA, ranging from a high estimate of 4.926 million people in 2001 (obtained by adding together the six Regional municipalities' Official Plan population targets, as revised to take into account recent development trends) to a low of 4.040 million people resulting from a recent (1982) projection by the Ontario Ministry of Treasury and Economics. The intermediate estimates range from 4.787 million people (derived through linear extrapolation of the 1976-81 trend) to 4.643 million people (prepared by Metropolitan Toronto with the Hamilton-Wentworth 1976-81 trend estimate added) to 4.519 million people (prepared by the Ontario Ministry of Transportation and Communications) to 4.425 million people (prepared by the Ontario Ministry of Treasury and Economics in 1979).

The 1979 Treasury and Economics forecast assumed a net migration to Ontario of 30,000 persons per year and a low fertility rate, producing the 2001 population estimate of 4.425 million people. The 1982 Treasury and Economics population projection, based on 1976 data, assumed net migration of only 10,000 persons per year, with fertility rates similar to those for the

URBAN DOCUMENTATION CENTRE
RESEARCH UNIT FOR URBAN STUDIES
McMASTER UNIVERSITY
HAMILTON, ONTARIO

1979 projection. This results in almost 400,000 fewer people in the GTA by 2001 - highlighting the importance of continued migration into the GTA for growth of the area.

If a zero net migration rate is assumed, a 2001 population estimate of 4.040 million people results - the same as that produced by the Treasury and Economics 1982 estimate. The Treasury and Economics projection started with a base year of 1976 and underestimated growth actually experienced during the first few years. When this correction is made, based on the 1981 census population, it basically cancels out the projected loss from zero net migration.

Based upon recent negative net migration figures, some suggest that a more realistic low population projection results if one assumes zero net migration but it is possible that the pendulum may swing back somewhat if good economic times are experienced. Higher population levels, approaching 5 million persons by 2001, could be achieved under such circumstances.

Between 1977 and 1981 the sum of the population targets of the six Regional Municipality plans have been reduced by approximately one million to a combined total of five million population by the year 2001. More detailed comment on the six plans appears later but there is a general concensus that the high growth of the 1950's and 1960's (which, if continued, could have led to 6 million people by the turn of the century) is unlikely to be achieved on a consistent basis during the coming 20 years in the face of continued adverse economic, fertility and migration factors. Should any of these factors change again, then obviously the forecasts would also become more optimistic.

B. Economic Forecasts

Exhibit 33 shows a number of employment projections for the GTA. Exhibit 34 shows these projections compared with population forecasts. Optimistic forecasts made in the 1960's and early 1970's have been rendered obsolete by subsequent events but there has been very little work done recently, either for the Province of Ontario or for the GTA, to estimate employment growth

over the next 20 years under different assumptions regarding world trade, energy prices, Canada's mega projects in energy, the automotive industry, and other factors which might be expected to affect economic growth in this area.

The most optimistic of the forecasts shown in Exhibit 33 is the one achieved by adding together the employment targets for the year 2001 in the six Regional Municipality Official Plans - an estimate of 2,587,000 jobs in total by the turn of the century, or a growth of 950,000 jobs or 57.7% during the 25 year period (1976 - 2001). A forecast prepared by the Metropolitan Toronto Planning Department in mid-1981 for five of the Regional Municipalities, with the revised Hamilton-Wentworth employment estimate added, gives an estimated 2,465,700 jobs by 2001, a growth of 819,065 jobs or 49.7% over the same 25 year period. The Ontario Economic Council prepared another set of economic forecasts for the Province of Ontario during the fall of 1981. If this is factored by the 46% of Ontario jobs which have historically been located within the GTA, it produces an estimate of 2.303 million jobs by 1991 - 85,000 jobs more than the estimate prepared by Metropolitan Toronto for 1991. A fourth employment estimate, prepared by the Royal Bank of Canada in February 1982 for the Province of Ontario, when factored by 46%, produces an estimate of 2.081 million jobs by 1986 - some 23,000 jobs more than the Metro estimate but 8,000 jobs less than the OEC estimate for that year.

Labour force participation rates (resident labour force divided by resident total population) can be a useful tool in assessing the compatibility and reliability of population, employment and commuting patterns forecasts. The weaknesses in employment and labour force data have already been noted and obviously affect the ability to analyse past trends. This, combined with the impact of the last few year's economic problems, make forecasts of the future outlook extremely difficult and uncertain.

Very approximate employment estimates for the regional municipalities for 1971 (essentially data contained in the Official Plans) and 2001 employment projections for each regional municipality (as contained in the Official Plans) are shown on Exhibits 35 and 36.

Economic pessimism is reflected in the feature article of the September 20, 1982 issue of the Financial Times which noted that over the previous year 573,000 jobs had disappeared in Canada, 135,000 persons had given up looking for jobs, and the unemployment rate in Ontario had risen from just over 6% in July, 1981 to over 10% in July, 1982. The article also noted that the unemployment rate in manufacturing stood at 13.3% compared to 6.4% in July, 1981. The article speculated that many of the jobs which have disappeared may not appear again owing to the devastating impact on corporate investment plans for the next few years of a 66% decline in profits coupled with a 102% increase in manufacturers' interest payments over the past two years.

Even if the economy were to fully recover by 1985 in terms of profitability and employment and net immigration to the GTA was to rise from the current zero or negative levels to 30,000 - 35,000 persons per year, the years of low growth in the early 1980's would reduce the growth levels which could be reached by 1991 and 2001. Fertility rates and net migration will likely remain at low or moderate levels, at least for the coming ten years, and economic conditions are not likely to recover to levels experienced in the 1970's until the 1990's. We have entered into a new era of uncertainty with some fundamental changes in key sectors (such as manufacturing), which requires a serious look at development prospects.

C. Growth Distribution Within the GTA

Exhibit 18 shows the 1980 built up area of the GTA, mapped from aerial photographs. As noted earlier, there are a number of important factors which will influence in varying ways the extent to which new growth of population and employment will take place, the manner in which such people and jobs will be housed and accommodated, and the density and locations at which such developments will take place.

It is very difficult to estimate whether or not the downward trend of persons per household will reverse itself and start to climb again in the face of adverse economic circumstances. The trend of increased numbers of single-parent families and childless couples is expected to continue during the next

two decades but other factors, as discussed earlier, may counter balance this trend. If the number of persons per household does start to rise again, the implications for the housing industry are profound.

An already reduced market for new housing, exacerbated by a lessened ability of the small remaining market of buyers to afford new houses, would have a substantial impact on the holding capacity of Metropolitan Toronto and other existing built-up areas, the density of population in such areas and growth of new urban areas. There exists substantial housing potential to "take up the slack" if hard times persist. (For example, it has been pointed out that an 0.1 increase in average persons per household in Metropolitan Toronto would increase by some 84,000 the number of persons who can be housed in Metro's existing housing stock. This is more than the population growth projected for the entire GTA for the decade 1991-2001 by the low (1982) Treasury and Economics' population projection referred to earlier.)

It is suggested that land ownership patterns and the impact of economic conditions/markets on developers' plans are not likely to have a sustained differential impact among the Regional Municipalities over the 10-20 year span. The impact of continuing office/communications automation is a decentralizing force since it would allow some people to work in their homes (with home computers and word processors, data links to offices) and would also allow employers to decentralize certain office functions while retaining close data links with their centralized offices. While there seems little doubt that office automation, computer developments and decreasing computer/communications costs will be a pervasive factor in our society/economy over the next twenty years, it is difficult to quantify its impact on development patterns. The process is expected to be a long evolving one, such that major distribution impacts may be delayed until the 1990's or beyond.

In terms of employment, any decentralization of office employment resulting from this phenomenon is likely to remain within the boundaries of a given Region (owing to communications costs) and might be largely negated by expected increases in office employment density under the impact of higher costs for office space.

The impact of automation and communications technology is still undetermined but could be high if businesses and individuals have the economic means to purchase and use such equipment to a greater extent. If high energy prices prevail, this might trigger greater use of such technology to reduce the need for commuting and inter-office travel - in spite of relatively low levels of economic growth and incomes.

The impacts of energy prices relative to commuting and growth distribution are likely to affect mainly the Metro Toronto/York distribution and the Hamilton-Wentworth/Halton distribution. Obviously, the degree to which the energy price factor has an impact is also affected by and related to rapid transit services.

III ANALYSIS AND COMPARISON OF RM OFFICIAL PLANS

All six of the Regional Municipalities (RMs) have Official Plans or draft Official Plans, with the exception of York. The planning discussion papers available from York provide some policy information and have been utilized for this study in the absence of an approved or draft Official Plan.

Policy statements in Regional Official Plans are usually fairly general in nature and most of those in the relevant plans for this study are no exception. The statements do provide a general framework to assist in interpreting the target growth levels, distribution patterns and infrastructure requirements presented in the Official Plans. Plan details within each Regional Municipality are not examined in depth, although impacts of targets and recent trends for some of the area municipalities are considered where these might affect growth pressures across regional municipal boundaries and inter-regional commuting patterns.

Appendix 2 presents notes summarizing the Regional Municipality Official Plans. These include highlights of development policies and related policies regarding transportation and other services. They are presented to provide an understanding of the general development and transportation framework within which the target projections of population and employment in each Official Plan were formulated.

A. Relative Growth Rates

2001 projections for population and employment are under continual review by RM planners. Recent adjustments have resulted in lower projections than those currently reflected in the Regional Official Plans. These revised, or working, targets are used in the following analysis. All of the RMs have considered and studied alternative plan concepts, involving differing levels of population and employment for the RM by 2001 and different distributions of this development within the RM. These have been used as input to transportation studies, carried out by most of the RMs during the past few years. Further revisions of population and employment targets for 2001 will undoubtedly be made as part of the ongoing planning process of each

RM and specifically as more evidence of changing economic and population growth trends becomes available. The numbers used in this analysis are adopted as the most current at this time and as a basis for comparison among the plans.

B. Population

Exhibit 37 summarizes historical percentage population growth in each of the six RMs for the period 1951-1981 and Exhibit 38 shows past growth and projected population growth to 2001, in accordance with the revised Official Plan targets. The Greater Toronto Area (GTA) as a whole grew by 1.365 million people, or 55%, during the 1961-81 period and is projected by the Official Plans to grow by an additional 1.096 million people, or 28.6%, during the 1981-2001 period. The substantially lower growth rate in percentage terms reflects lower absolute growth relative to a substantially higher base when comparing the next twenty years to the last twenty. All of the RMs show lower percentage growth rates during the next 20 years, with the sharpest reduction for Metropolitan Toronto, reflecting the limits of new land available for development.

In addition to the revised Official Plan targets for 2001, Exhibit 39 shows a number of other projections of the distribution in 2001. Exhibit 40 shows the share of growth based on the regional plan projections. In these projections Metro captured 37.6% of population growth in the 1961-1981 period, it is expected to achieve only 12.5% of growth during the next 20 years. Three regional municipalities show a substantial increase - Peel from 27.6% to 37.4%, York from 10.1% to 26.0%, and Halton from 10.6% to 13.1%. Durham shows a reduction from 9.5% to 7.9% and Hamilton-Wentworth a reduction from 4.6% to 3.1%.

The regional planning departments of the two "anchor" RMs at the east and west ends of the GTA are estimating a relative slow growth, related to anticipated slow growth in jobs in both Hamilton-Wentworth and Durham, and planners in Metro anticipate slackening population growth related to the land available for new residential development and aging of the current population. On the other hand, planners in Peel, York and Halton anticipate substantial spill-over growth from Metro.

These relative growth rates and shares of growth appear reasonable in terms of comparisons among the RMs. Their reasonableness in total, compared to expected total growth of the GTA, is discussed below.

C. Employment

The Regional Municipalities adjacent to Metropolitan Toronto continue to anticipate substantial overspill development from Metro. It is recognized that economic development and levels of net migration into the GTA will be major features affecting growth rates of the entire GTA. Hamilton-Wentworth and Durham, as the industrial "anchors" at the west and east ends of the GTA respectively, both see a resurgence of growth in manufacturing jobs as one of the key factors underlying continued growth, with continuing growth in Metropolitan Toronto and good transportation links also of strong importance.

Projected growth in employment for each of the six RMs is summarized in Exhibit 36 for the period 1971-2001. These comparisons show that projected employment growth in both Peel and York is expected to be well in excess of 300% with employment growth in Halton approaching 200% and in Durham at about 75% during the 30 year period (1971-2001). Metro and Hamilton are expecting to have growth rates of about 40% and 30% respectively in employment over the same period, and the average growth rate for the entire GTA is projected to be about 80% - representing about 1.1 million jobs on a 1971 base of 1.46 million jobs. The largest absolute increase in employment is projected in Metro, at almost 400,000, followed by Peel at almost 360,000 and York at close to 190,000. Durham, Hamilton-Wentworth and Halton are each projected to have job increases in the range 54,000-104,000 jobs.

In the absence of historical trend information on job growth, it is difficult to comment on the reasonableness of these relative growth rates. They seem reasonable in relative terms given the location and existing economic base of each regional municipality and the availability of serviced industrial land in each, but the overall growth in GTA employment could vary widely, as noted earlier.

Referring to Exhibit 40, Metro is projected to capture some 35% of job growth during the period 1971-2001 with Peel capturing over 31% and York somewhat more than 16%. The other three Regional Municipalities together are projected to capture about 18% of GTA employment growth. While the relative growth rates in employment may be fairly reasonable, it is by no means clear that the total employment projected by the Official Plans for the year 2001 is reasonable in the context of anticipated population levels at that time. On a straight line basis, population is projected to increase at 1.3% per annum for the 20 years from 1981 to 2002, while employment in the GTA is projected to increase at about 2.5% per annum. The compatibility of total projected employment and population levels by the year 2001 is discussed further below.

A comparison of the activity ratio (employment/population) trends for each RM is interesting. The 2001 population and employment targets for both Durham and Halton produce activity ratios identical to those actually experienced in 1971, the latest year for which firm population and employment data was available at the time of writing. The Durham activity ratio would remain at 0.33 and that for Halton at 0.41. Data and targets for 1971 and 2001 respectively, for the other four RMs indicate a substantial increase: from 0.40 to 0.52 for Hamilton-Wentworth; from 0.48 to 0.62 for Metro; from 0.40 to 0.52 for Peel; and, from 0.29 to 0.44 for York. Intermediate data on activity ratios are also available for 1981 for two Regional Municipalities: Metro (0.50) and Peel (0.47). The 1971/1981 trend for two RMs indicate that the higher figure for 2001 seems reasonable, although the implication that the ratio will rise faster in future for Metro and slower for Peel than they did in the past should probably be examined. It is unfortunate that 1981 employment data does not yet exist for Durham, Hamilton-Wentworth, Halton and York; when this becomes available it will help to indicate whether the targeted activity ratios for 2001 appear reasonable in light of 1971/1981 trends in these three RMs. While census employment data is not yet available, it is hoped that the finalized 1982 total employment survey for York will produce data for that RM in the relatively near future which will help in this regard.

D. Land Use Patterns

Exhibit 41 shows current (1982 or another recent year) and projected (2001) figures for residential and industrial acreage for each of the six Regional Municipalities and the total GTA. Of the approximately 2 million acres (809,371 ha) of available land, about 260,000 acres (105,218 ha) are expected to be in residential use by 2001, representing about 13% of the total. Approximately 72,000 acres (29100 ha) are projected to be in industrial use by 2001, representing about 3.6% of total acreage. In terms of the 3,140 total square miles (8,132.5 km^2) in the six RMs, about 400 square miles (1,035.9 km^2) are expected to be in residential use and about 110 square miles (284.8 km^2) in industrial use by the year 2001.

It is expected that, by the year 2001, all land available for development in Metropolitan Toronto will be under urban development. The percentages expected in Peel are about 27%, in Hamilton-Wentworth about 14% followed by York with 12% and Durham with 9%. Data for Halton was not available. Commercial acreages for 2001 were received only from Peel; the above percentages include a rough estimate of commercial acreages for the other RMs.

A map of future designated land uses is shown in Exhibit 42. This map is based upon the RM Official Plans. It shows the extent and approximate patterns of planned land use relative to "ultimate" development as foreseen by the plans. The "ultimate" development may represent higher population and employment figures than those indicated for 2001. It is difficult to estimate the date by which "ultimate" development might occur in each RM although it has been suggested that the year 2021 might be approximate in some instances. This will obviously depend strongly on overall GTA growth rates and the related factors influencing development.

Several of the Official Plans and related documents recognize a hierarchical relationship among various cores and "downtowns" with particular reference to commuting patterns and in the provision of retail and other services. The relationship among these commercial centres is fairly evident in the context of the overall "drawing power" of the Toronto core and the high employment opportunities throughout Metropolitan Toronto (subcentres are not shown).

A comparison of Exhibit 42 with the 1980 urbanized areas shown in Exhibit 18 illustrates the substantial accretion and infilling which is anticipated during the coming 20-40 years. The Official Plans generally anticipate a continuation of the past trends towards decentralization of both people and jobs.

Finally, the map in Exhibit 42 seems to show that the two tier concept of the Toronto Centred Region is no longer expected to occur. The Parkway Belt currently provides a narrow separation between Brampton-Bramalea and urban development in southern Peel, as well as between some of the development in south York and overspill development from Metro Toronto, but the Belt is narrow enough to be relatively insignificant between Metro and York, for example. The rapid growth expected in Peel and South York will, in effect, be an accretion to urbanized areas of Metropolitan Toronto, and substantial growth in both population and employment is expected in Regional York, as noted earlier. This was really a foregone conclusion once the York-Durham interceptor was built and serviced land became available to serve the strong market for development north of Metropolitan Toronto.

E. Zoned Acreages and Densities

Exhibit 43 summarizes regional development density comparisons currently (for 1981 or another recent year) and as planned for 2001 or "ultimate" development. Population densities are expressed as people per gross residential acre (population divided by residential acreage) and employment densities are expressed as manufacturing/wholesaling jobs (where available as otherwise indicated) per industrial acre. Population densities for the various Regional Municipalities, as planned by the regions for 2001, lie in the range from 10 to 32; the latter applies to Metropolitan Toronto and most of the other RMs are planned to be in the lower part of the range. The planned GTA average may be about 20 people per acre - although this is difficult to estimate because of fragmentary data. Similarly for manufacturing/wholesaling jobs, the 2001 density for Metropolitan Toronto may be somewhat less than in 1976 (say about 20 jobs per acre) while the values for the other Regional Municipalities are planned to be in the range of 9-12 jobs per acre. These are fairly significant variations, but appear reasonable

given the relative land prices and availability of vacant land for development in each of the Regional Municipalities.

Urban development proposed in one Regional Municipality may exert pressure for similar development of land in an adjacent municipality. The example of overspill from Metro into Durham, York and Peel is obvious. Pressures of this type may also be experienced by Halton for urban development on lands adjacent to Brampton and Mississauga. New transportation corridors, such as Highway 403 in Halton, may also create urbanization pressures. Pressures such as these should be considered and their implications on alternatives distribution patterns assessed.

F. Implications Regarding Planning Targets

As recently as 1977, the RM Official Plans and related planning studies were calling for GTA targets of almost 6 million people and almost 3 million jobs. The more recently prepared planned targets of the Regional Municipalities, when summed for the GTA, target 4.98 million people and 2.80 million jobs in 2001 - a reduction of about 1 million people and 200,000 jobs. There has been a stronger tendency to scale back on population targets than on employment targets, in the face of declining growth prospects for Ontario and the GTA. The population and employment targets supplied during 1982 by the Regional Municipalities now add up to 4.926 million people (a further reduction of about 54,000 people) and 2.597 million jobs (a further reduction of 203,000 jobs). The most recent changes reflect a growing awareness of present economic conditions and their impact on growth prospects and job formation in the GTA.

The question remains whether the RM plan targets, when totalled for the GTA, appear reasonable in light of current expectations regarding growth for the GTA as a whole. The activity ratio (jobs divided by population) for the total GTA using the revised targets (4.926 million people and 2.597 million jobs) is 0.53. On the assumption that there is negligible commuting across the GTA outer boundary, this might appear to be somewhat high. If a "medium" employment rate (employed labour force divided by total labour force) of 0.925 is used, and a participation rate of 0.51, the GTA population

of 4.926 million persons would correspond to an employed labour force for the GTA of 2.324 million and a similar number of jobs. This would imply that the target figure for jobs resulting from the six Official Plans (2.597 million) is about 273,000 jobs too many relative to the population targets. Even if there were full employment (an employment rate of 1.00, corresponding to zero unemployment) in 2001, the composite Official Plan employment target would appear to be about 85,000 jobs too high. It would therefore be necessary to scale back the employment targets to bring them into balance with the population targets for the GTA as a whole. Industrial growth was reported as still reasonably strong in Peel and York but depressed in Hamilton-Wentworth, Durham and other parts of the GTA. If the assumption on the participation rate proves correct, the current total employment targets contained in the plans are optimistic. This has obvious implications on infrastructure needs and investments, bearing in mind that there could, and probably would, be regional differences in employment and participation rates.

Earlier population projections by Metropolitan Toronto had been reasonably borne out by the 1981 population figures, but manufacturing jobs are not keeping pace and unemployment is higher than anticipated. Nevertheless, employment in Metro has grown twice as rapidly as population in recent years, such that the role of Metropolitan Toronto as a source of jobs for adjacent RMs has remained strong. There has been less residential intensification in Metro than called for in MetroPlan. There is water/sewer capacity for substantially more than the 2.5 million persons targetted in the plan; this higher level of population would be more likely to be achieved, it would seem, if lower economic growth is experienced and significant "doubling-up" of households were to occur. It has also been pointed out, however, that a counter tendency might occur if homeowners in the 45-55 year age group in Metro were to retain their existing homes throughout their retirement, feeling possibly that they could not afford a move to rental accommodation. To the extent that such people might not be receptive to "doubling-up" and as the owners of these older homes in Metro reach retirement age and drop out of the labour force, a reduction in persons per dwelling unit might be experienced and those commuting to jobs in Metro would come from farther away. On balance, it was felt that the trend to fewer

persons per household may well level off during coming years as younger persons and households share existing housing stock with their parents and other older households. The housing implications of the population targets in the RM Official Plans are shown on Exhibit 44.

Exhibit 45 shows readily available data on the activity ratio (jobs divided by population) for each RM in 1971 and estimated for 2001, plus some data on participation rates (labour force divided by total population) and employment rates (employed labour force divided by total labour force) from which it is possible to estimate employed labour force in 2001.

IV THEORETICAL SCENARIO "MODELS"

In an attempt to provide a conceptual framework for considering the impacts of the various factors discussed earlier and the interactions among these factors, theoretical growth scenarios can be postulated - each comprising a self consistent set of assumptions regarding the various development factors and their interactions.

The five 'external' factors considered as most influencing potential growth scenarios in the Greater Toronto Area (GTA) are (i) jobs and income growth (ii) interest rates and inflation (iii) net migration (iv) energy prices, and (v) automation/communication.

The four scenarios presented in Exhibit 46 are not considered any more realistic or likely than any other but rather are intended to illustrate the inter-relationship of the variables and their potential impacts on and implications for growth.

The assumed rate of growth of jobs and real disposable income is high in Scenario 1 and progressively lower in Scenarios 2, 3 and 4. Interest rates and the rate of inflation are assumed to vary inversely (low in Scenario 1 and high in Scenarios 3 and 4). On the assumption that good times (high rate of growth of jobs and real disposable incomes) could follow if interest rates and inflation are reduced, the rates vary inversely. Net migration is assumed to vary in the same manner as job/income growth - on the assumption that the GTA could attract net migration when it is experiencing buoyant economic growth but would have smaller, or zero, net migration if economic growth rates were low.

Energy prices are assumed at medium levels in Scenarios 1 and 2, at low levels in the hard time Scenario 4 and at a high level in Scenario 3. If world energy prices are low, this would help contribute to continuing economic recession in Canada by reducing the viability of energy mega-projects. If energy prices are high, this would mean higher transportation fuel prices and less disposable income. It can therefore be postulated that a resurgence of energy price increases in the face of general continuing economic recession might lift economic growth in the GTA from low to medium/low levels.

The impact of automation and communications technology is still undetermined but could be significant if businesses and individuals have the economic means to purchase and use such equipment to a greater extent. Advances are making automation and communications equipment more affordable. Scenario 1 reflects a "high" impact. Scenarios 2 and 3 reflect a medium impact with Scenario 3 showing that if high energy prices prevail, this could trigger greater use of such technology to reduce the need for commuting and inter-office travel - in spite of relatively low levels of economic growth and incomes. Scenario 4 reflects a low impact.

The four major descriptors of the alternative scenarios are (1) development/population growth (2) development densities (3) exurban development and (4) inter-regional commuting. Employment/population growth ranges from high in Scenario 1, through medium and medium low in Scenarios 2 and 3 respectively, to low in Scenario 4 - in line with the jobs income and net immigration assumptions noted above.

The other combinations of variables reflect discussions earlier in this report about the interrelationships and impacts of the different situations. The slightly higher level of exurban development shown for Scenario 4, relative to Scenario 3, reflects the possibility that low fuel prices would contribute to more exurban development in spite of bad economic times. Development densities would be lower in Scenario 4 than in Scenario 3. Inter-regional commuting is shown to be high in Scenario 1, because of low development densities and high exurban development, and progressively lower moving through Scenarios 2 and 3 to 4. Similar and relatively low levels of inter-regional commuting are anticipated for Scenarios 3 and 4; the lower level normally expected in Scenario 4 (because of fewer people and jobs) could be offset by the greater amount of exurban development and resulting longer commuter trips owing to the lower energy prices assumed in that scenario.

Population aging is assumed to be relatively high in Scenarios 2, 3 and 4, reflecting the inexorable growth in the older age cohorts as the "baby boom" moves from middle age to old age and the lack of a strong younger migrant population coming into the GTA. A stronger migration into the GTA and a

slightly smaller aging impact is assumed for Scenario 1 - based on the possibility that fertility levels will rise somewhat in good times.

Finally, the average household size is expected to be low under Scenario 1, moving through medium to high in Scenarios 2 and 3, reflecting the potential "doubling up" phenomenon. It is shown as medium/high in Scenario 4, reflecting the offsetting impact of greater exurban development in that scenario.

The qualitative descriptions of the four scenarios shown in Exhibit 46 have been converted to quantitative terms in Exhibit 47, except in the instances of urban density and inter-regional commuting. (The variety of densities across the GTA renders an overall figure meaningless. Similarly, the absence of consistent data on inter-regional commuting make quantification of this factor somewhat meaningless.)

It will be recalled that the range of population forecasts for the GTA as a whole in 2001 is defined by a high level of almost 5 million people (based on summing original population targets for the six Official Plans) to a low of 4.04 million people (based on the assumption of zero net migration to Ontario and the GTA). The four scenarios utilize the population figures of the forecasts discussed earlier in this report.

The net migration assumptions of these population forecasts reflect the implicit assumption that high economic growth (i.e. more jobs) will also occur with high population growth, and vice versa. Corresponding assumptions can be made regarding labour participation rates, labour force, employment rates, and, therefore, employment.

The labour force participation rates shown assume that the ratio of labour force divided by population will stabilize at current values. It is difficult to estimate, however, whether participation rates would be relatively similar across the four scenarios, would be higher as one moved towards a hard times scenario (reflecting the need for all adults in a household to hold external jobs to make ends meet in hard times) or would be lower in a hard times scenario (reflecting the impact of fewer available jobs). On balance,

it is assumed that these two opposing forces may cancel each other out and the same participation rate of 0.51 is assumed across all four scenarios. Other scenarios could be developed using varied participation rates.

Labour force levels in each scenario are then estimated by multiplying the population by the participation rate in each case. In order to estimate employed labour force, it is necessary to postulate the employment rate which is the opposite of the unemployment rate. As shown in the exhibit, unemployment is assumed to be about 5% in the high scenario ranging to 10% in the low scenario, such that the employment rate ranges from 0.95 to 0.90. Employment levels (that is, the estimated number of jobs in the GTA) are then estimated by multiplying the labour force by the employment rate for each scenario. This makes the assumption that net commuting across the GTA boundary is negligible.

It is important to note that the levels of employment shown in Exhibit 47 are generally substantially lower than those shown in estimates prepared a few years ago and discussed earlier in this report. For example, the 2.40 million jobs shown for the high scenario represent 66,000 fewer jobs than Metro's earlier estimates and almost 200,000 fewer jobs than would occur if the 2001 current job targets of the six regional Official Plans are achieved. The job estimates for Scenarios 2, 3, and 4 are correspondingly lower, and the 1.82 million jobs estimated for the low Scenario represents fewer than 200,000 jobs more than 1976 estimated employment levels in the GTA. These estimates are but another possibility. Whatever estimated employment levels are utilized will have a substantial impact on estimates of inter-regional commuting and hence transportation infrastructure implications.

The difficulties of estimating future household size and the impact of other variables have already been discussed. The household sizes assumed for each scenario attempt to reflect the inter-relationships suggested earlier. The number of households in the GTA is then estimated by dividing the population level by average household size in each case. This produces estimates ranging from 2.5 million households in the high Scenario to 1.44

million households in the low Scenario. Since there were 1.39 million households in the GTA in 1981, the increase in households by 2001 ranges from 1.11 million, for the high Scenario, to a very small increment of 50,000 for the low scenario and 80,000 for the medium/low Scenario.

The low population growth and high "doubling-up" impacts assumed in Scenarios 3 and 4 would have a very substantial impact on the homebuilding industry. If people per household is equated to people per dwelling unit, it can be seen that Scenarios 3 and 4 would produce an almost negligible market for new dwelling units, in the order of 2,500 - 4,000 per year for the GTA. The high Scenario, in contrast, would produce a market for some 55,000 new dwelling units per year in the GTA.

The overall effect on population densities and the number of people in each regional municipality, if more dwelling units were created through subdividing or converting existing units to allow for "doubling up", would be minor in terms of the broad population densities, population levels and inter-regional commuting patterns being considered by this study. (Metro and Hamilton-Wentworth, because of high existing housing stocks, might attract higher population levels).

In terms of net migration, as shown on Exhibit 47, the high Scenario shows a continuation of earlier patterns, with net migration to Ontario in the range of 80,000 persons per year (which would translate to about 35,000 persons per year into the GTA). The medium/low Scenario assumes about 60,000 persons per year net migration to Ontario, or about 25,000 persons per year into the GTA. The medium/low Scenario is based upon the Ministry of Treasury and Economics 1979 population forecast (4.40 million) which assumed a net migration of 30,000 persons per year to Ontario, or about 13,000 persons per year to the GTA. The low Scenario is very similar to the Treasury and Economics 1982 forecast of 4.039 million persons per year which was based upon a net migration to Ontario of 10,000 persons per year, using 1976 as its base year, which understated growth actually experienced during the next few years and was therefore some 85,000 persons too low by 1981 relative to the 1981 census.

Conclusions

The scenarios presented in this chapter have been developed in an effort to define and understand the factors affecting growth in people, labour force, jobs, households and urban densities in the GTA. The resulting estimates are neither targets nor plans; they define only a possible range as a context for developing strategies and plans, monitoring development trends, and acting accordingly in terms of government policies.

It is clear that the various growth rates and population densities represented by the range of scenarios would impact strongly on the amount and location of new urban development. Similarly the proportion of new population which might be housed in new housing stock, as opposed to "doubling-up" in existing stock, has obvious profound implications for the development industry and the rate at which new lands are opened up. Sensitivity tests on any variable can be carried out to assess the variable's impact and implications.

The population and employment targets provided by the Regional Municipalities are undergoing revision in light of changing conditions regarding economic growth and net migration. Most of the Regional Municipalities have also carried out transportation and other studies using several scenarios which embody different levels of population and employment for the year 2001 and beyond. The Official Plans in many cases do not give specific 2001 population/employment targets but rather speak in terms of "ultimate" targets and interim levels which might be achieved by 2001, or perhaps sooner, or later, depending on economic conditions and other factors. The plans are not "hard and fast" in terms of their 2001 implications. This flexibility is highly desirable recognizing the substantial uncertainties in overall GTA growth and the resulting need to develop planning strategies for the GTA and its constituent Regional Municipalities which will move in desired directions, while remaining adaptable in the face of unfolding trends.

Taking, for purposes of analysis and comparison, the target figures as summarized in the exhibits of this section, the following conclusions can be drawn:

- relative regional growth rates of population called for in the Official Plans seem reasonable in light of past development trends. They may be subject to significant change if overall GTA growth remains low and if high interest rates and low growth in real disposable incomes cause a continuing slump in the market for new housing;

- the relative growth rates of employment also seem fairly reasonable although it would appear that most employment targets maybe high relative to the population targets, when considered for the GTA as a whole;

- proposed "ultimate" development patterns appear to be a reasonable extrapolation of existing urbanized areas, including the location of commercial centres and industrial areas as well as new residential areas;

- recent trends indicate a continued slowing down of population and employment growth in most Regional Municipalities relative to planning targets and a possible trend toward lower residential densities, although the latter is difficult to determine at this time and may be completely swamped by a tendency to "doubling up" of households if high interest rates and low growth of real disposable incomes persist;

- the planning targets for individual Regional Municipalities, as presented in this report, represent one development alternative for 2001 which can be assessed in terms of its infrastructure and planning strategy implications. The other four scenarios, or any others developed, can similarly be assessed.

V CONCLUSIONS

This document has discussed the past development trends within the Greater Toronto Area. It has discussed those factors which appear to have influenced the extent and the distribution of that past growth. It then briefly looked at several possible future patterns for growth, including the pattern contained within a composite picture of the Regional plans.

Since the 1950's the area has undergone continuous and rapid development. The area has developed into the largest and most important centre in Canada for manufacturing, financial and other services. The growth has been attributed to a complex interaction of factors which include a high in-migration, high fertility rates, rapid job growth in both the manufacturing and service categories and a good system of government providing the necessary services and infrastructure. In the past three decades the GTA has gained an attractiveness in terms of ethnic and cultural diversity, physical efficiency and amenities, recreational opportunities and related factors such that it is now world renowned as an attractive place to live and work.

While there were undoubtedly many factors which influenced the relative growth rates of the six Regional Municipalities over the 1961-1981 period, it seems likely that the following are among the most significant:

- saturation of growth in Metro owing to consumption of most of the available unurbanized land by the early 1970's;

- the two tier concept of the Toronto Centred Region is no longer expected to occur;

- explosive growth in Peel, reflecting overspill from Metro, proximity to Metro's CBD, the strategic location of Peel between Metro and Hamilton/Burlington, Peel's large amount of available land suitable for urbanization with Lake Ontario-oriented water/sewer services, and good transport links between Metro and Peel via the Queen Elizabeth Way, Highway 401, GO Transit services and surface transit feeding the Bloor subway;

- lesser growth in Durham, owing to its less strategic location in the "Golden Horseshoe" and greater distance to Metro's CBD but substantial growth nevertheless, some of which can be attributed to the accessibility provided by GO Transit services and Highway 401 and strong growth in the automotive industry until the late 1970's;

- accelerating growth in York, particularly during the past few years, as earlier service constraints were removed by construction of the York-Durham servicing scheme and increasing transport access to Metro was provided across the long north Metro boundary by Highway 400, the Allen Road, the Don Valley Parkway, Highway 404, northward extensions of the Yonge and Spadina rapid transit lines, and extensive networks of arterial roads and surface transit;

- a relatively constant share of growth in Halton reflecting its greater distance from Metro and relative lack of easy access to the regional core;

- a declining share of growth in Hamilton-Wentworth reflecting industrial land constraints in the 1976-1981 period, a relative decline in industrial employment related to total employment in Canada and Ontario, and Hamilton's less strategic position at one end of the Horseshoe.

In the future it is expected that the rate of growth in either absolute or relative terms will be less than that achieved in the preceding three decades. However, there is significant uncertainty about the actual growth. A wide range of possible patterns of development have been suggested. These development patterns have been based on various assumptions concerning key variables including population growth rates, employed labour force, household size, energy prices and government initiatives in transportation on other fields.

The major difference in most views of what the future holds concerns the magnitude of population growth. Most recent scenarios are lower than the aggregate view supplied by the regional projections. These differences are largely based on the most current evidence concerning trends on fertility rates and net migration rates in Ontario.

Labour force and employment are critical variables in planning and monitoring the well-being of the area. Yet there was continual difficulty obtaining consistent and timely information on these variables. Clearly more work could be done on past or present and future employment estimates for the GTA.

Household size has declined significantly in the past but appears to be levelling off under the influence of both demographic and economic forces. The declining household size has resulted in the household growth rate exceeding population growth rate. Changes in household size have had and will continue to have a strong influence on the demand for new housing in the area.

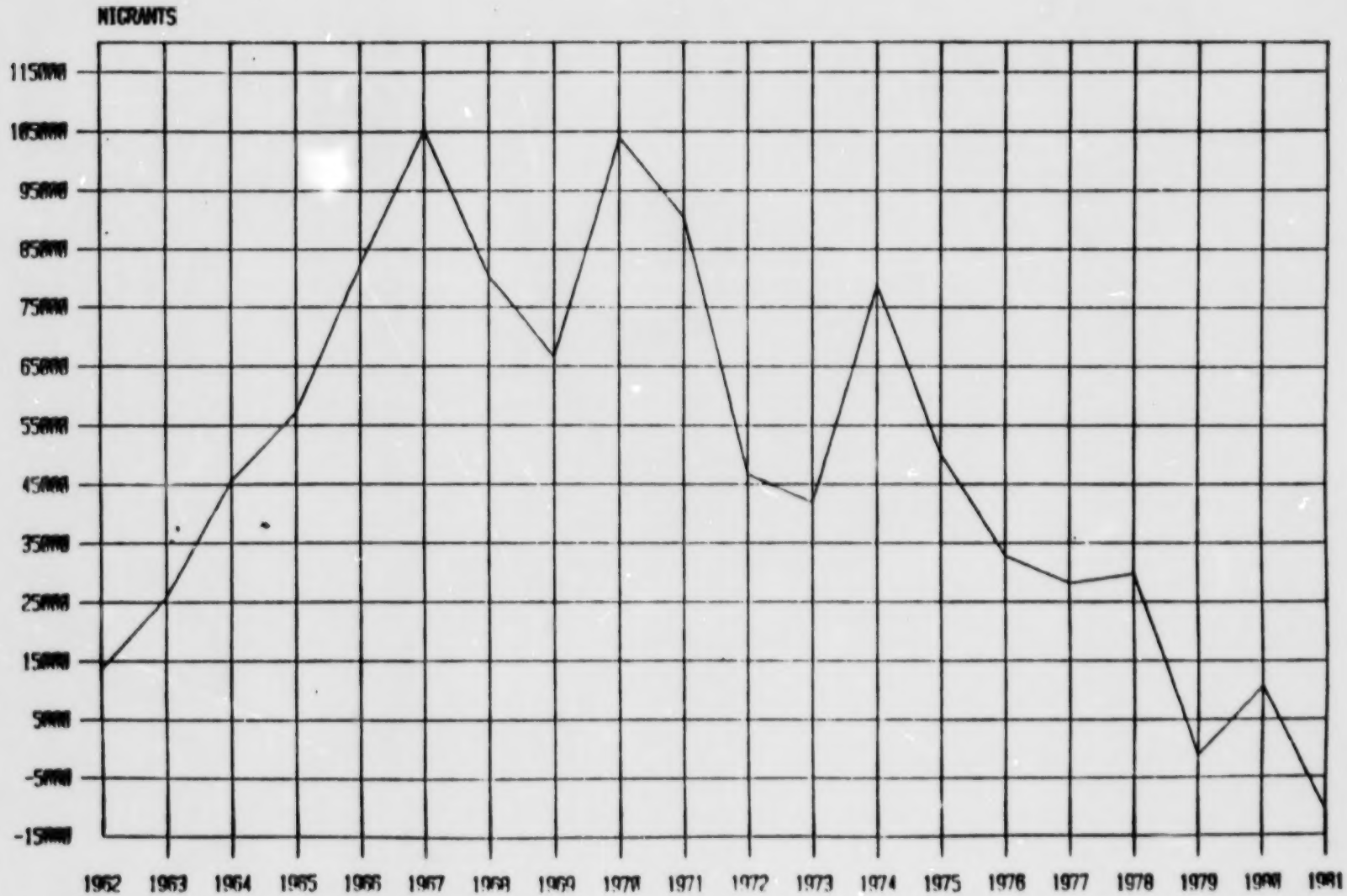
The continual development of the area with a wide dispersion of housing and job locations, and consequently travel patterns, will need an effective transportation system. Recent initiatives such as the Metro Accelerated Rapid Transit Study and MTC's GO ALRT Strategy provide a good basis for accommodating future transit requirements in the GTA. The timing and location of these facilities will potentially have significant impacts on the urban structure.

There is no inherent reason that a period of slower growth should necessarily be viewed as a negative factor in the GTA. In fact, it can be argued that slower growth reduces pressures and permits a rationale debate on the development options available to the area. It should be clearly recognized that there is a degree of uncertainty about the range of potential growth within the GTA. Many of the factors, including world manufacturing trends and uncertainty regarding Canada's associated development policies are largely beyond the control of those within the region.

Taking a positive view, it seems likely that the GTA will continue to enjoy moderate or better growth than the national average and its role and attractiveness as an urban centre will increase with many of the major development proposals. Technological developments, such as cheaper communications and improved transit services, may significantly increase the convenience and attractiveness of the GTA.

HISTORICAL NET MIGRATION - ONTARIO

1961 - 1981



Source: Statistical Services Branch, M.T.C.

EXHIBIT 2

MANUFACTURING ESTABLISHMENTS AND EMPLOYMENT
1971 - 1979

REGIONAL MUNICIPALITY	1971 - 1979[1]							
	1971	1972	1974	1975	1976	1977	1978	1979
DURHAM								
Number of Establishments	294	287	296	289	280	285	308	334
Production Workers	20,946	21,123	21,772	21,254	22,181	23,220	24,373	25,971
Total Workers	27,943	28,147	29,057	28,377	29,116	29,742	31,096	32,546
HALTON								
Number of Establishments	295	305	324	322	319	313	368	418
Production Workers	15,991	16,404	18,685	17,140	18,186	17,403	17,826	19,803
Total Workers	20,404	21,893	24,470	22,238	23,099	22,290	23,136	26,342
HAMILTON-WENTWORTH								
Number of Establishments	5[2]	948[2]	947	919	906	883	946	964
Production Workers	46,994	47,402	48,923	47,319	46,995	46,195	47,844	50,99[illegible]
Total Workers	[illegible]	[illegible]	[illegible]	59,5[illegible]	58,682	57,842	59,389	62,65[illegible]
PEEL								
Number of Establishments	550	575	[illegible]	[illegible]	707	[illegible]	907	99[illegible]
Production Workers	26,298	28,374	33,046	33,276	32,723	31,030	35,426	39,82[illegible]
Total Workers	37,847	40,7[illegible]	47,910	45,990	45,026	44,456	49,[illegible]00	54,349
METRO TORONTO								
Number of Establishments	4,883	4,812	4,703	4,488	4,334	4,130	4,[illegible]51	4,96[illegible]
Production Workers	166,154	170,[illegible]80	179,154	178,555	176,908	169,081	178,236	185,3[illegible]
Total Workers	237,833	242,379	253,341	244,904	242,978	234,105	245,5[illegible]	253,031
YORK								
Number of Establishments	328	349	417	425	441	441	547	62[illegible]
Production Workers	9,76[illegible]	11,011	13,030	12,847	13,741	13,4[illegible]	15,479	16,82[illegible]
Total Workers	13,155	14,821	17,332	16,[illegible]80	17,[illegible]6	17,[illegible]70	19,9[illegible]	21,619
GREATER TORONTO AREA								
Number of Establishments	6,912	6,876	6,943	6,730	6,487	6,326	7,282	7,903
Production Workers	285,352	294,994	314,[illegible]94	310,391	310,334	300,417	318,984	336,74[illegible]
Total Workers	397,[illegible]10	408,871	434,021	417,723	416,387	405,905	428,749	450,54[illegible]

SOURCE: Statistics Canada 831-209

[1] No data for 1973
[2] Hamilton-Wentworth 1971, 1972 data is for Wentworth County

EXHIBIT 3

GTA AREA

LABOUR FORCE - 1961-1971

C.D.	1961	1971	(/61-/71) %	1976	(/71-/76) %	(/61-/76) %
Durham Ontario	61,987	89,745	44.78	111,960	24.78	80.65
Halton	38,534	82,595	114.34	106,910	29.44	177.44
Hamilton-Wentworth	138,717	176,200	27.02	186,850	6.04	34.70
Peel	41,647	116,160	177.58	182,875	57.43	337.00
Metro Toronto	755,120	1,027,795	45.35	1,068,190	3.93	53.9
York		69,800		94,450	35.32	
Total GTA Area	1,036,205	1,562,295	50.81	1,751,255	12.1	69.00

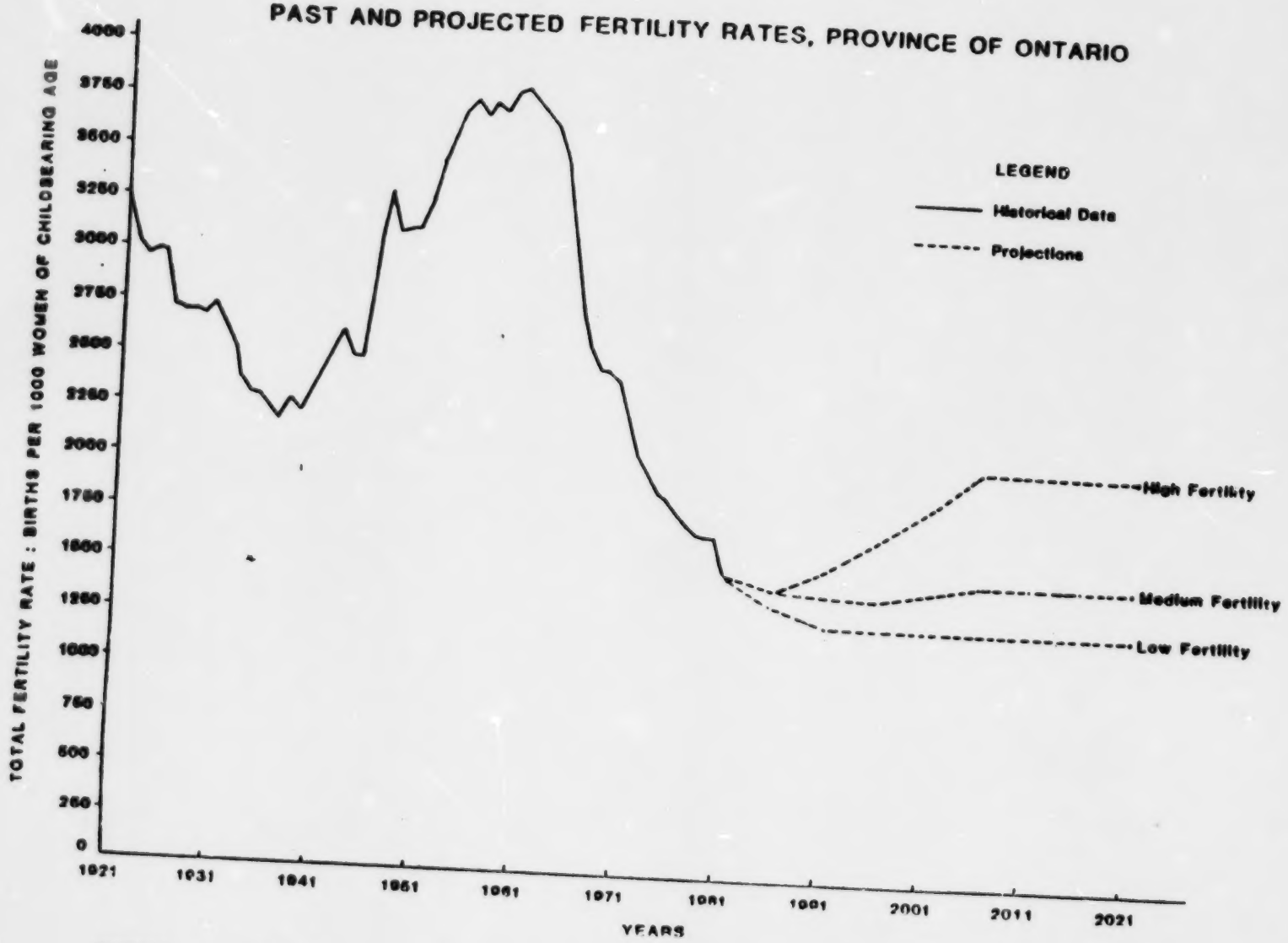
N.B. - (1) Labour Force was not done for 1966 Census
(2) Labour Force statistics not yet available for 1981 Census
(3) There have been minor boundary changes in Metro, York and Peel between 1961 and 1976. Figures have been appropriately revised to reflect and take into account the major change in The Regional Municipality of Durham (i.e. The union of Durham County and Ontario County)

L.F. = Composed of that portion of the civilian non-institutional population 15 years of age and over who during the reference week were employed or unemployed.

Source: Statistics Canada

EXHIBIT 4

PAST AND PROJECTED FERTILITY RATES, PROVINCE OF ONTARIO



SOURCE: Metropolitan Toronto Planning Department, Research Division, March, 1981

EXHIBIT 5

GREATER TORONTO AREA NATURAL INCREASE AND NET MIGRATION

1951 - 1981

PERIOD	NATURAL INCREASE #	%	NET MIGRATION #	%	TOTAL GROWTH #	%
51-56	151,892	38.7	241,035	61.3	392,927	100.0
AAG*	30,378		48,207		78,585	
56-61	204,180	47.1	229,607	52.9	433,787	100.0
AAG	40,836		45,922		86,738	
61-66	207,822	45.7	246,686	54.3	454,508	100.0
AAG	41,564		49,337		90,901	
66-71	177,799	43.7	228,977	56.3	406,776	100.0
AAG	35,560		45,796		81,356	
71-76	155,471	64.3	86,523	33.7	241,994	100.0
AAG	31,095		17,304		48,399	
76-81**	142,067	59.3	97,503	40.7	239,570	100.0
AAG	28,413		19,501		47,914	

* A.A.G. - Average Annual Growth
**Birth, Death Estimates for 80-81

Source: Metropolitan Toronto Planning Department
Research Division, January 1983
Prepared from Census Data, Vital Statistics.

EXHIBIT 6

HOUSEHOLD SIZE BY REGIONAL MUNICIPALITY

1961-1981

REGIONAL MUNICIPALITY	1961 -1981				
	1961	1966	1971	1976	1981
DURHAM	3.6	3.55	3.5	3.34	3.12
HALTON	3.8	3.75	3.7	3.37	3.10
HAMILTON-WENTWORTH	3.61	3.55	3.3	3.01	2.8
METRO TORONTO	3.7	3.45	3.2	2.96	2.75
PEEL	3.8	3.75	3.7	3.42	3.25
YORK	3.7	3.65	3.6	3.46	3.27
GREATER TORONTO AREA	3.8	3.6	3.4	3.09	2.89

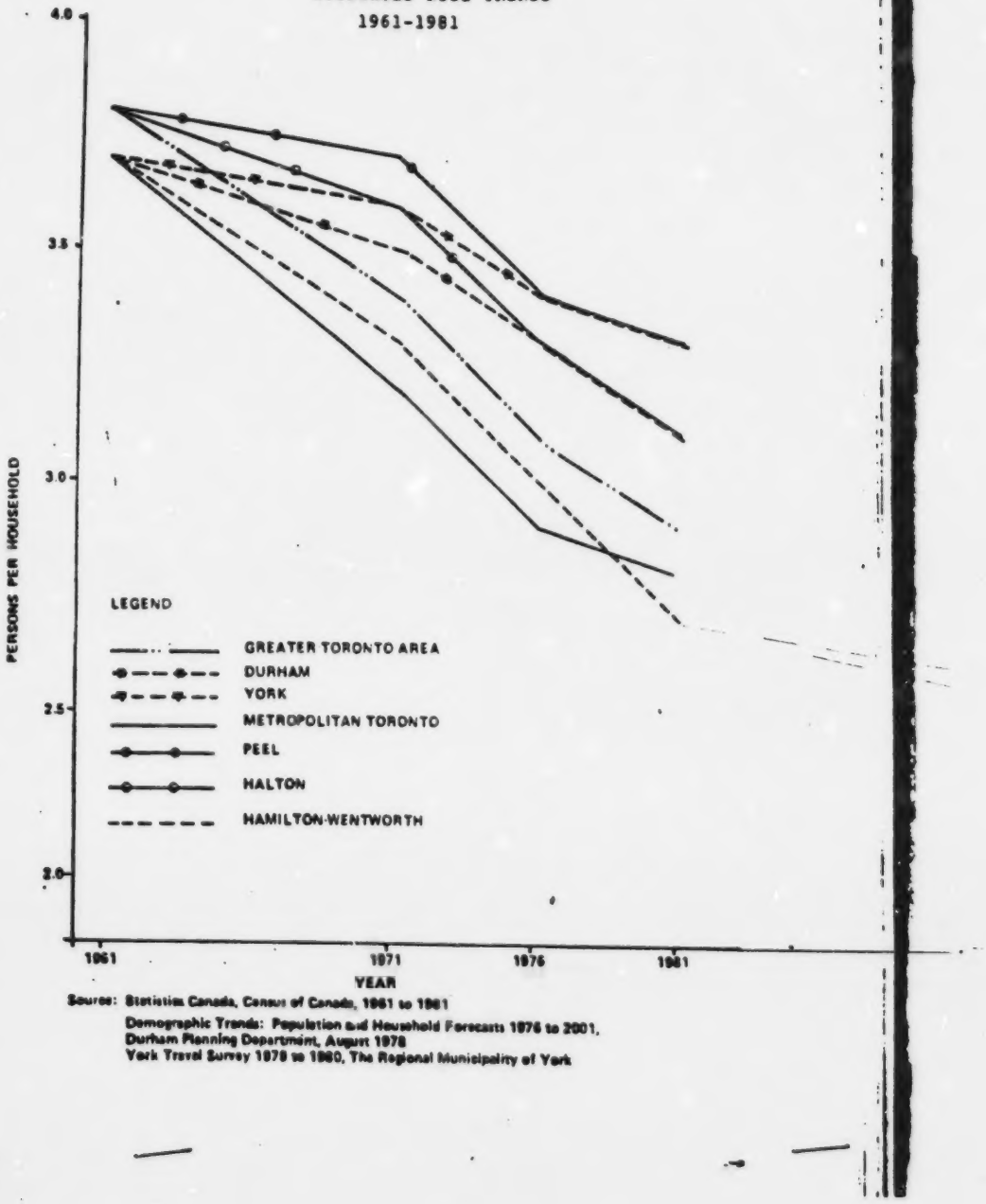
Source: 1961-1976: From MTC unpublished report, based on Statistics Canada Census Data.

1981 1981 Census of Canada # 95-903.

EXHIBIT 7

HOUSEHOLD SIZE TRENDS

1961-1981



Source: Statistics Canada, Census of Canada, 1961 to 1981

Demographic Trends: Population and Household Forecasts 1976 to 2001, Durham Planning Department, August 1978

York Travel Survey 1978 to 1980, The Regional Municipality of York

EXHIBIT 8

GREATER TORONTO AREA -
PERCENTAGE GROWTH IN POPULATION AND HOUSEHOLDS

1961-1981

	61-66	66-71	71-76	76-81
POPULATION	18.4%	13.8%	8.0%	6.6%
HOUSEHOLDS	21.2%	23.2%	18.9%	14.1%

Source: R.I.S.C.
Based on Census data (Statistics Canada)

EXHIBIT 9

ONTARIO PERSONAL AND PERSONAL DISPOSABLE
INCOME PER CAPITA 1961-1981

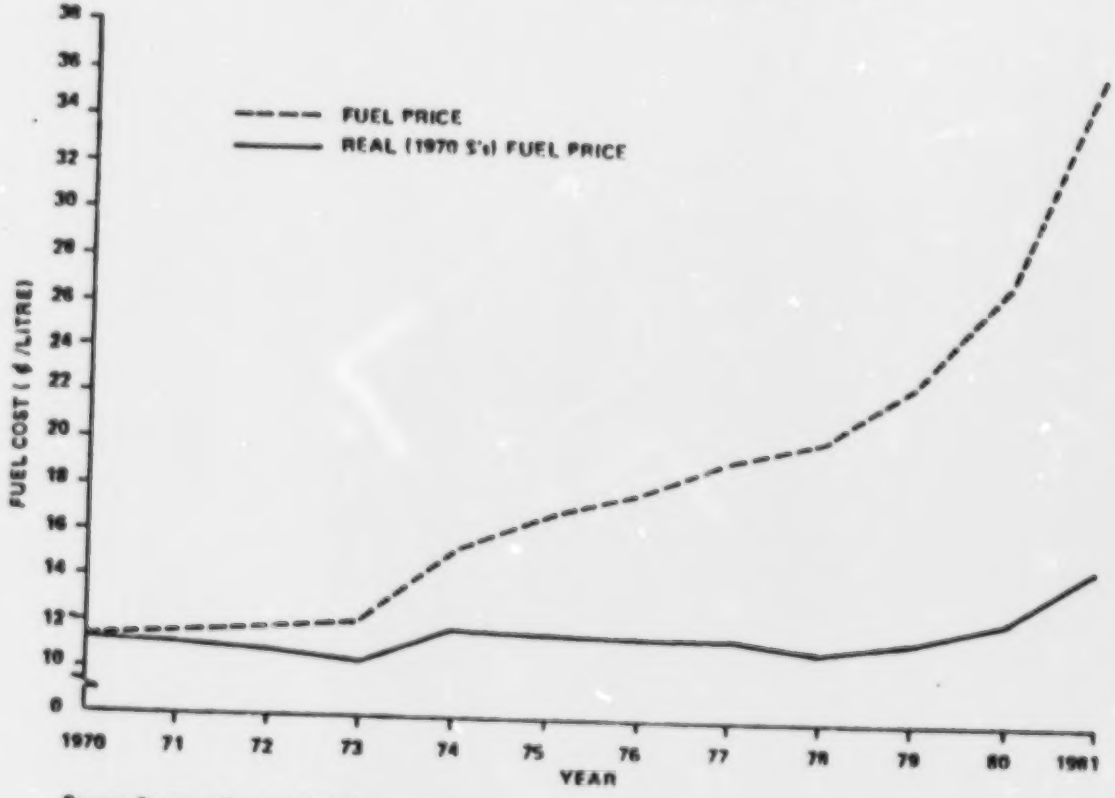
	Income/Capita (current $)[1]			Income/Capita (1971 $)		% Change (1971 $)	
Year (1)	P.I. (2)	P.D.I. (3)	C.P.I.[3] (4)	P.I. (5)	P.D.I. (6)	P.I. (7)	P.D.I. (8)
1961	1,954	1,719	75.0	2,605	2,292		
1962	2,062	1,816	75.9	2,717	2,393	4.30	4.41
1963	2,156	1,901	77.2	2,793	2,462	2.80	2.88
1964	2,267	1,976	78.6	2,884	2,514	3.26	2.11
1965	2,435	2,107	80.5	3,026	2,617	4.92	4.10
1966	2,680	2,277	83.5	3,210	2,727	6.08	4.20
1967	2,884	2,418	86.5	3,334	2,795	3.86	2.49
1968	3,146	2,596	90.0	3,496	2,884	4.86	3.18
1969	3,470	2,802	94.1	3,688	2,978	5.49	3.26
1970	3,705	2,939	97.2	3,812	3,024	3.36	1.54
1971	4,020	3,189	100.0	4,020	3,189	5.46	5.46
1972	4,459	3,571	104.8	4,255	3,407	5.85	6.84
1973	5,043	4,059	112.7	4,475	3,602	5.17	5.72
1974	5,843	4,700	125.0	4,674	3,760	4.45	4.39
1975	6,596	5,356	138.5	4,762	3,867	1.88	2.85
1976	7,376	5,945	148.9	4,954	3,993	4.03	3.26
1977	8,039	6,507	160.8	4,999	4,047	0.91	1.35
1978	8,785	7,184	175.2	5,014	4,100	0.30	1.31
1979	9,624	7,877	191.2	5,033	4,120	0.38	0.49
1980	10,614	8,635	210.6	5,040	4,100	0.14	(0.49)
1981	12,129[2]	9,753[2]	236.9	5,120	4,117	1.59	0.41

SOURCES:

1. 1961-1976: Statistics Canada, National Income and Expenditure Accounts 1961-1975, 1966-1980 (Stats. Can. #13-201)
2. 1981: Conference Board of Canada (1981 P.I. estimate, based on most recent Statistics Canada data; March 1982 Telephone Communication; Per capita figure based on Ontario 1981 Census Interim Population plus 1%)
3. 1961-1965: Statistics Canada, January 1982 Telephone Communication.
   1966-1981: Statistics Canada, The Consumer Price Index, December 1981 (#62-001)

EXHIBIT 10

ONTARIO GASOLINE PRICES: HISTORICAL



Source: Statistics Canada 62-001, Ontario Ministry of Energy.

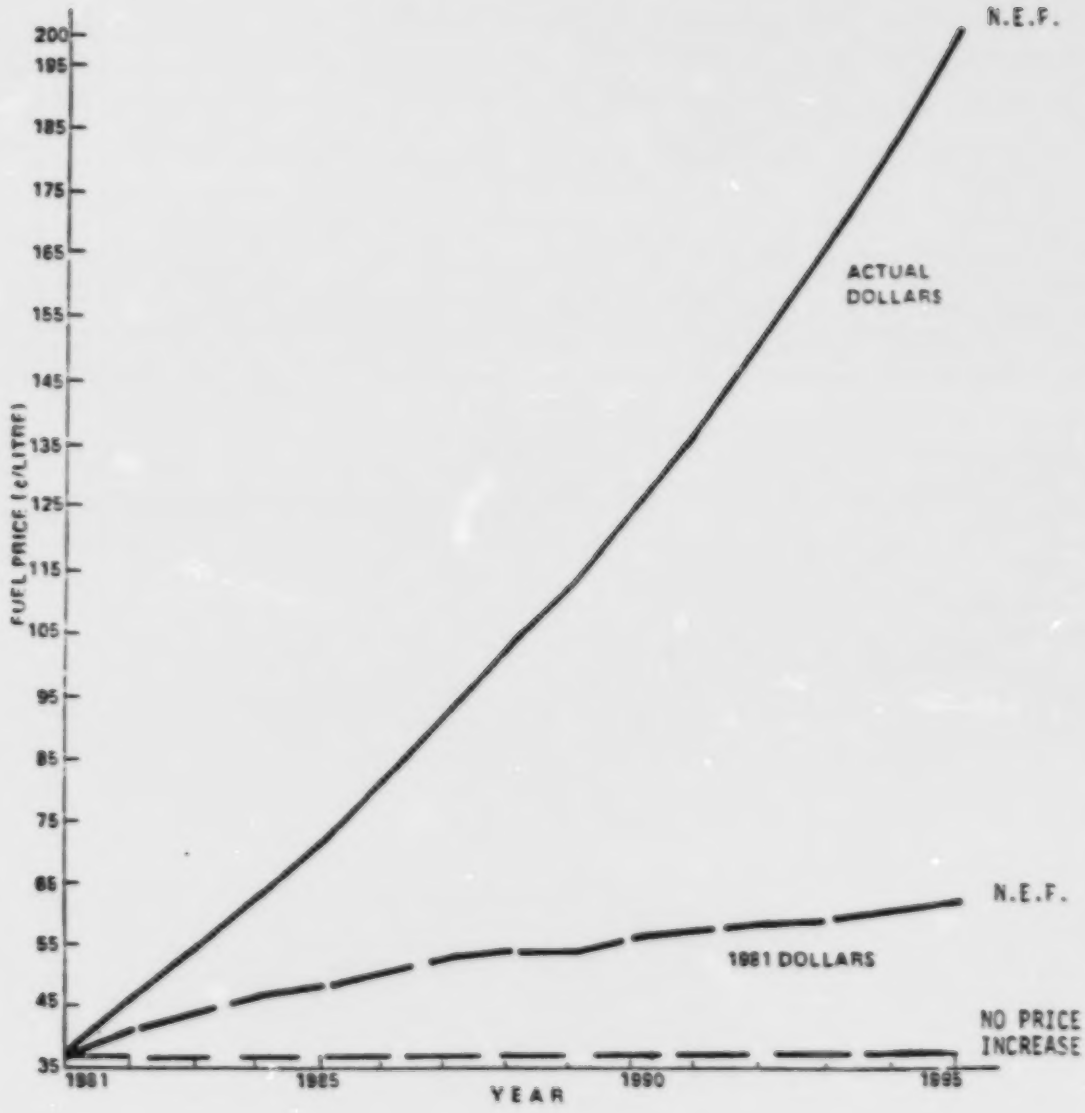
Note: The Consumer Price Index for Canada, obtained from Statistics Canada using 1970 as the base year, was used to deflate the nominal price of fuel.

Ontario Regular Leaded Fuel Prices, Nominal and Real, 1970 to 1981

SOURCE: Transportation Energy Data Report, Vol. 1, No. 2.

EXHIBIT 11

ONTARIO GASOLINE PRICES: PROJECTED



Motor Gas Price - 1981 and Actual Dollars

SOURCE: Transportation Energy Management Program based on N.E.P.

EXHIBIT 12

TOTAL HOUSEHOLDS, SIX CENTRAL AREAS, QUINQUENNIALLY, 1961 PLUS

Region	1961 #	1966 #	Growth '61-66 #	Growth '61-66 %	1971 #	Growth '66-71 #	Growth '66-71 %	1976 #	Growth '71-76 #	Growth '71-76 %	1981 #	Growth '76-81 #	Growth '76-81 %
Metropolitan Toronto	430,037	516,736	86,699	62.5	629,270	112,534	61.1	712,970	83,700	45.5	776,375	63,405	38.7
Durham	40,695	50,600	9,905	7.2	59,995	9,395	5.1	73,670	13,675	7.4	90,650	16,980	10.4
York	29,627	34,939	5,312	3.8	44,720	9,781	5.3	58,845	14,125	7.7	76,735	17,890	10.9
Peel	28,703	43,596	14,893	10.8	69,790	26,194	14.2	109,600	39,810	21.6	150,770	41,170	25.1
Halton	27,557	36,035	8,478	6.1	51,775	15,470	8.6	68,060	16,285	8.8	81,575	13,515	8.2
Hamilton-Wentworth	95,788	109,149	13,361	9.6	119,660	10,511	5.7	136,150	16,490	9.0	147,200	11,050	6.7
TOTAL GTA	652,407	791,055	138,648	100.0	975,210	184,155	100.0	1,159,295	184,085	100.0	1,323,305	164,010	100.0

Source: Statistics Canada
R.I.S.C. Statistical Series - Vol. 1, December 1982.

EXHIBIT 13

TRENDS IN GTA DWELLING UNIT MIX 1971-1981

REGIONAL MUNICIPALITY	1971			1976			1981		
	SINGLE	TOTAL	%	SINGLE	TOTAL	%	SINGLE	TOTAL	%
DURHAM	44,275	60,095	73.7	50,290	73,685	68.2	59,700	90,650	65.9
HALTON	37,685	51,775	72.8	45,925	68,065	67.5	50,905	79,982	63.6
HAMILTON-WENTWORTH	74,455	119,660	62.2	77,910	136,140	57.2	84,621	147,200	57.5[1]
METRO	256,265	629,270	40.7	247,780	712,965	34.8	258,609	764,376	33.8
PEEL	39,990	69,790	57.3	50,755	109,595	46.3	67,558	163,263	41.4
YORK	36,400	44,720	81.4	44,465	58,855	75.6	60,420	83,602	72.3
GREATER TORONTO AREA	489,070	975,310	50.1	517,125	1,159,305	44.6	581,813	1,329,073	43.7

SOURCE: Exhibit II, Part A Working Paper, July 1982.

[1]Census of Canada (# 95-903). Occupied dwelling units are equivalent to households.

EXHIBIT 14

DWELLING STARTS AND COMPLETIONS FOR THE SIX REGIONAL MUNICIPALITIES, ANNUALLY, 1976-1981

STARTS

	1976	1977	1978	1979	1980	1981
Metro Toronto	11,658	14,476	13,929	8,266	9,383	9,035
Durham Region	5,494	4,023	3,000	1,503	1,113	2,919
York Region	1,738	1,905	3,323	5,290	3,664	5,653
Peel Region	10,050	9,661	7,342	6,379	6,572	9,023
Halton Region	2,355	2,503	2,118	2,729	1,323	2,006
Hamilton-Wentworth Region	4,148	2,324	1,411	1,191	1,046	1,433
TOTAL GTA	35,443	34,892	31,123	25,358	23,101	30,129

COMPLETIONS

	1976	1977	1978	1979	1980	1981
Metro Toronto	14,769	11,818	14,922	13,950	13,859	8,846
Durham Region	4,712	5,435	3,582	2,759	1,159	1,707
York Region	2,198	2,399	1,960	4,477	5,248	5,074
Peel Region	8,786	10,039	7,496	10,635	6,609	6,127
Halton Region	3,041	2,049	2,862	2,792	1,871	2,035
Hamilton-Wentworth Region	5,035	4,123	2,833	1,472	1,215	1,325
TOTAL GTA	38,541	35,863	33,655	36,085	29,961	35,114

Source: CMHC Housing Statistics
RISC Statistical Series - Vol. I, December 1982.

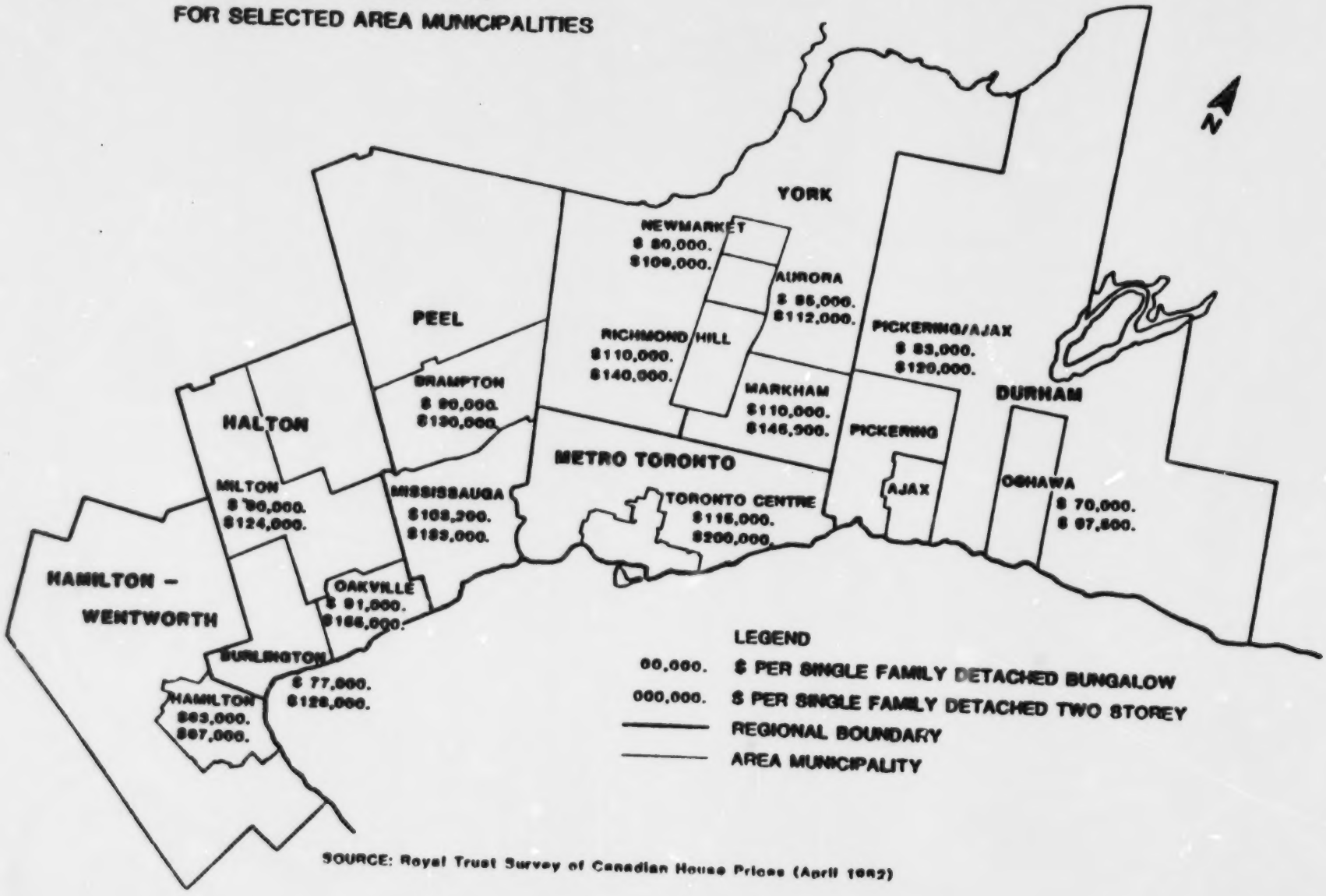
EXHIBIT 15

DWELLING UNIT STARTS & MARKET SHARE
1976-81 BY REGIONAL MUNICIPALITY

	STARTS 1976-81	STARTS YEAR	% SHARE
Metro	66,747	11,124	37
Durham	18,052	3,001	10
York	21,573	3,595	12
Peel	49,027	8,171	27
Halton	13,034	2,172	7
Hamilton-Wentworth	11,553	1,925	6
TOTAL GTA REGION	180,046	30,015	

Source: CMHC Housing Statistics
RISC Statistical Series, Vol. I
December, 1982.

EXHIBIT 16: HOUSE PRICES (APRIL 1982)
FOR SELECTED AREA MUNICIPALITIES



SOURCE: Royal Trust Survey of Canadian House Prices (April 1982)

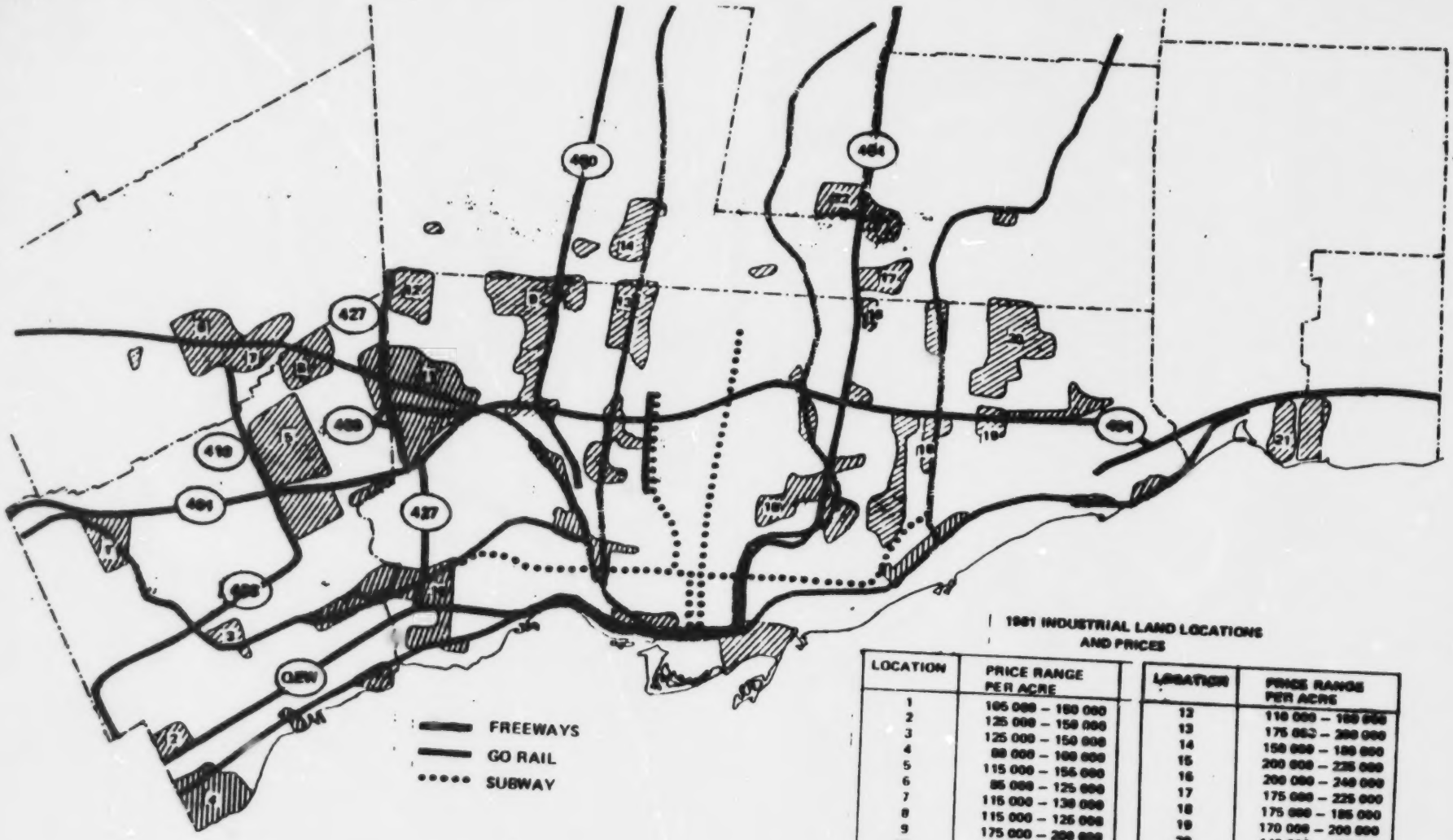


Exhibit 17/ 1981 Industrial Locations and Representative Land Prices

1981 INDUSTRIAL LAND LOCATIONS AND PRICES

LOCATION	PRICE RANGE PER ACRE
1	105 000 – 150 000
2	125 000 – 150 000
3	125 000 – 150 000
4	80 000 – 100 000
5	115 000 – 155 000
6	85 000 – 125 000
7	115 000 – 130 000
8	115 000 – 125 000
9	175 000 – 200 000
10	160 000 – 170 000
11	140 000 – 170 000
12	110 000 – 150 000
13	175 000 – 200 000
14	150 000 – 180 000
15	200 000 – 225 000
16	200 000 – 240 000
17	175 000 – 225 000
18	175 000 – 185 000
19	170 000 – 200 000
20	140 000 – 160 000
21	80 000 – 115 000
22	150 000 – 175 000

Values are for Fully Serviced, Vacant Industrial Land in Representative Locations

Source: A.E. LePage

EXHIBIT 18

SERVICING IMPLICATIONS OF POPULATION GROWTH BY REGIONAL MUNICIPALITY

REGIONAL MUNICIPALITY	1981 POPULATION (000's)	CURRENT CAPACITY FOR URBANIZED POPULATION		REG'L OFFICIAL PLAN 2001 URBAN POPULATION*	PLANNED 2001 CAPACITY FOR URBANIZED POPULATION	
		WATER (000's)	SEWAGE (000's)		WATER (000's)	SEWAGE (000's)
Durham	284	450	500	378	450	500
Halton	254	490	326	398	490	446
Hamilton/ Wentworth	411	484	556	405	699	608
Metro Toronto	2137	2500	2500	2274	2500	2500
Peel	491	515	575	901	800	800
York	252	420	420	420	457	457
Greater Toronto Area	3829	4859	4877	4776	5396	5511

Source: Capacities based on most recent data (July-October, 1982) from Regional Municipality Planning Departments.

* Most current projection by RM planning staff.
York and Halton RP population figures are OP target levels.

EXHIBIT 19
1980 BUILT UP AREA

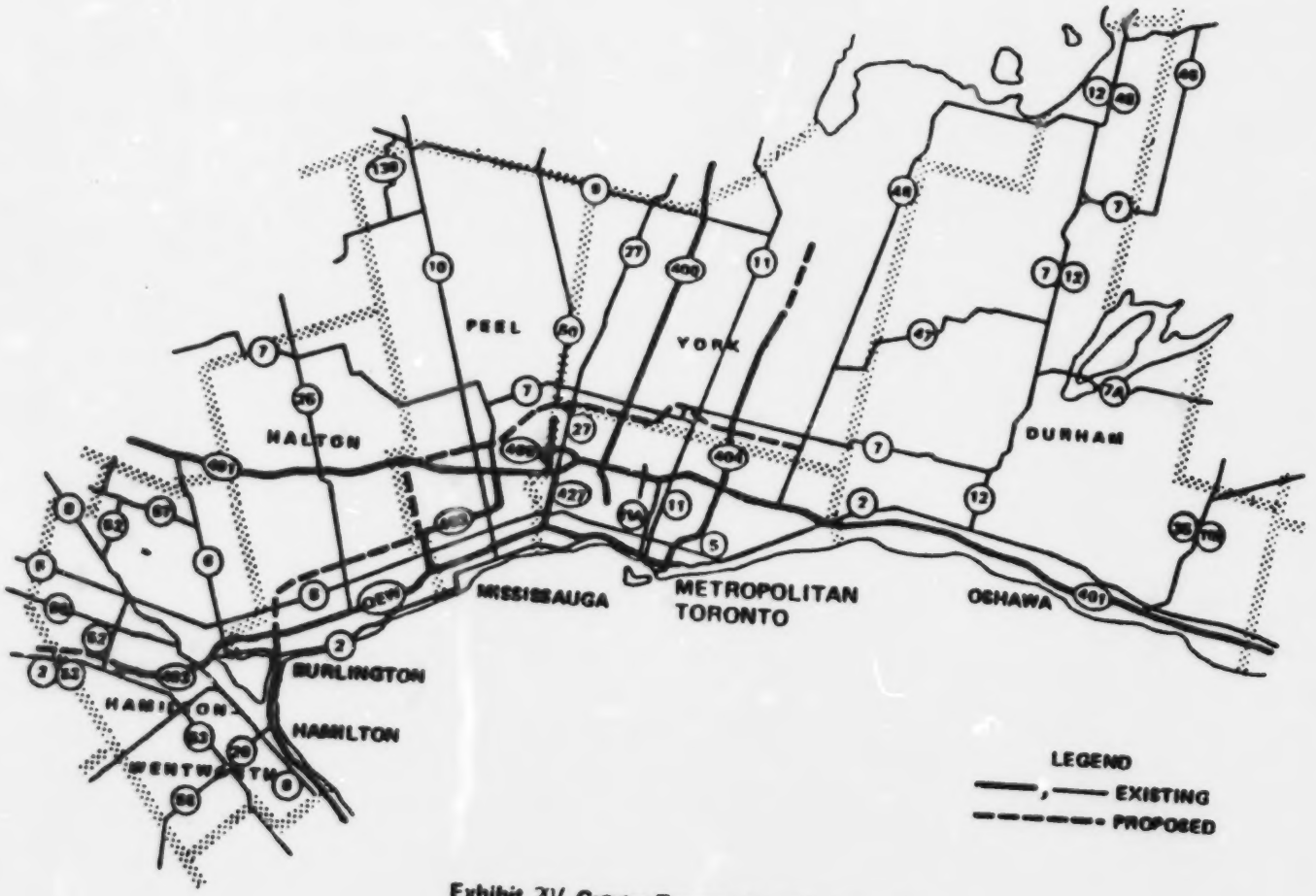


Exhibit 20/ Greater Toronto Area Highway System

Source: MTC

Exhibit 21/ Openings of New Facilities, 1956 – 1982

Source: Ministry of Transportation and Communications
Transportation Demand Forecasting Office
Feb, 1983

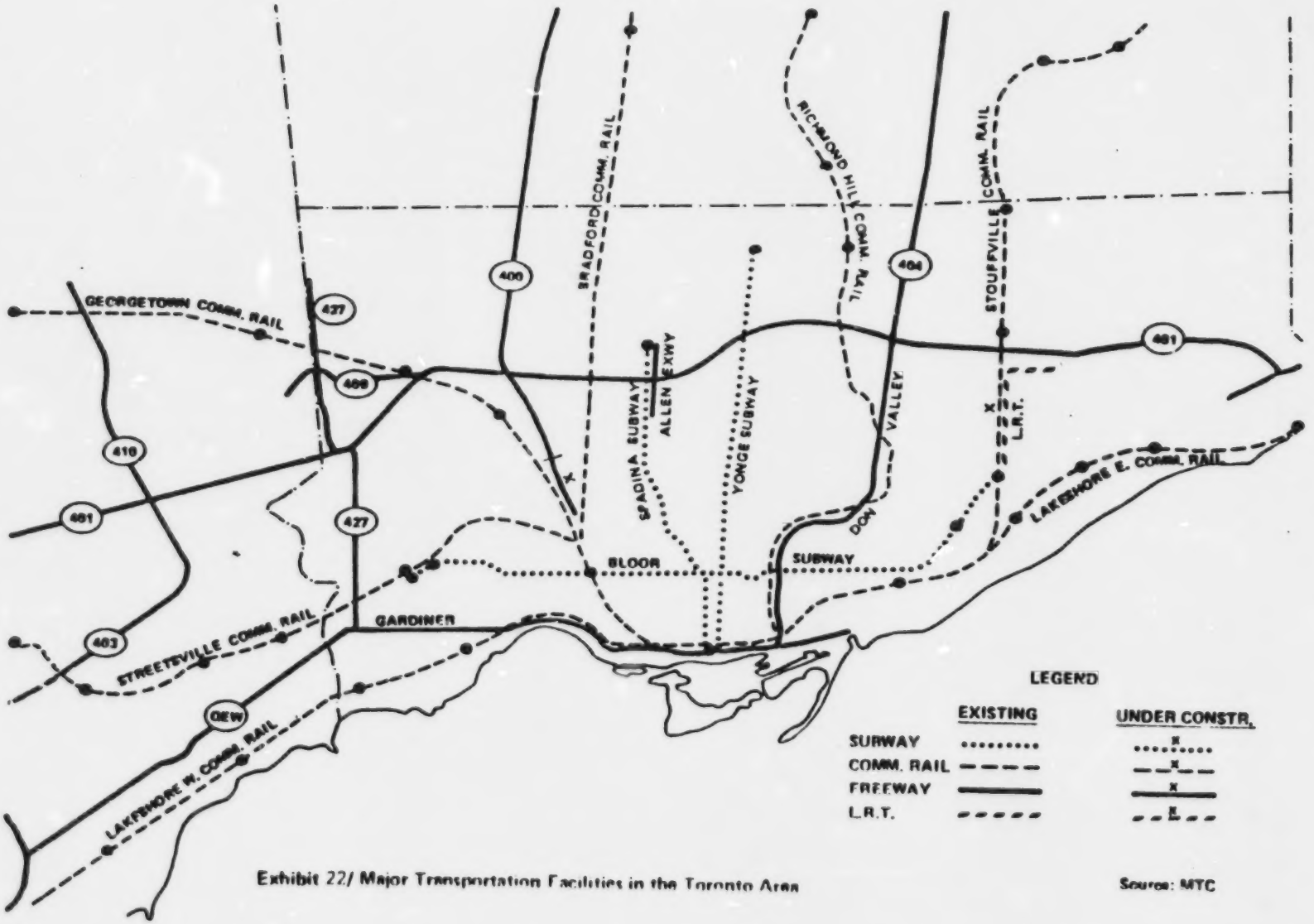


Exhibit 22/ Major Transportation Facilities in the Toronto Area

Source: MTC

EXHIBIT 23

1971 CENSUS JOURNEY TO WORK

PERSONS BY PLACE OF RESIDENCE AND PLACE OF WORK

PLACE OF RESIDENCE \ PLACE OF WORK	METRO	DURHAM	YORK	PEEL	HALTON	HAM.-WENT.	TOTAL
METRO	878,578	4,743	13,498	30,461	3,425	1,045	931,750
DURHAM	13,681	74,098	1,305	211	44	31	89,370
YORK	27,167	628	34,932	1,611	89	67	64,494
PEEL	43,494	129	808	59,854	2,912	281	107,568
HALTON	9,702	59	142	6,413	45,470	12,210	73,966
HAMILTON-WENTWORTH	1,634	27	65	427	7,490	147,174	156,817
TOTAL	974,256	79,684	50,840	98,977	59,430	160,808	1,423,995

SOURCE: 1971 Census of Canada
Compiled by M.T.C.

EXHIBIT 24

1971 & 2000 RELATIVE DISTRIBUTION OF HOME TO WORK TRIPS

		METRO	DURHAM	YORK	PEEL	HALTON	HAMILTON-WENTWORTH
METRO	1971	94.3	0.5	1.4	3.3	0.4	0.1
	2000	84.6	2.0	6.6	6.5	0.3	0.05
DURHAM	1971	15.3	82.9	1.5	0.2	0.05	0.03
	2000	16.2	81.1	2.5	0.1	-----	-----
YORK	1971	42.1	1.0	54.2	2.5	0.1	0.1
	2000	42.5	2.3	51.2	3.9	0.06	-----
PEEL	1971	40.4	0.1	0.8	55.6	2.7	0.3
	2000	29.3	0.04	2.3	59.9	7.9	0.6
HALTON	1971	13.1	0.1	0.2	8.7	61.4	16.5
	2000	7.5	-----	0.17	19.6	53.9	18.8
HAMILTON-WENTWORTH	1971	1.0	0.02	0.04	0.3	4.8	93.9
	2000	0.7	-----	-----	1.1	8.1	90.1

SOURCE: 1971 - Census of Canada compiled by M.T.C.
2000 - MTC TARMS Test 6 forecast made in 1976

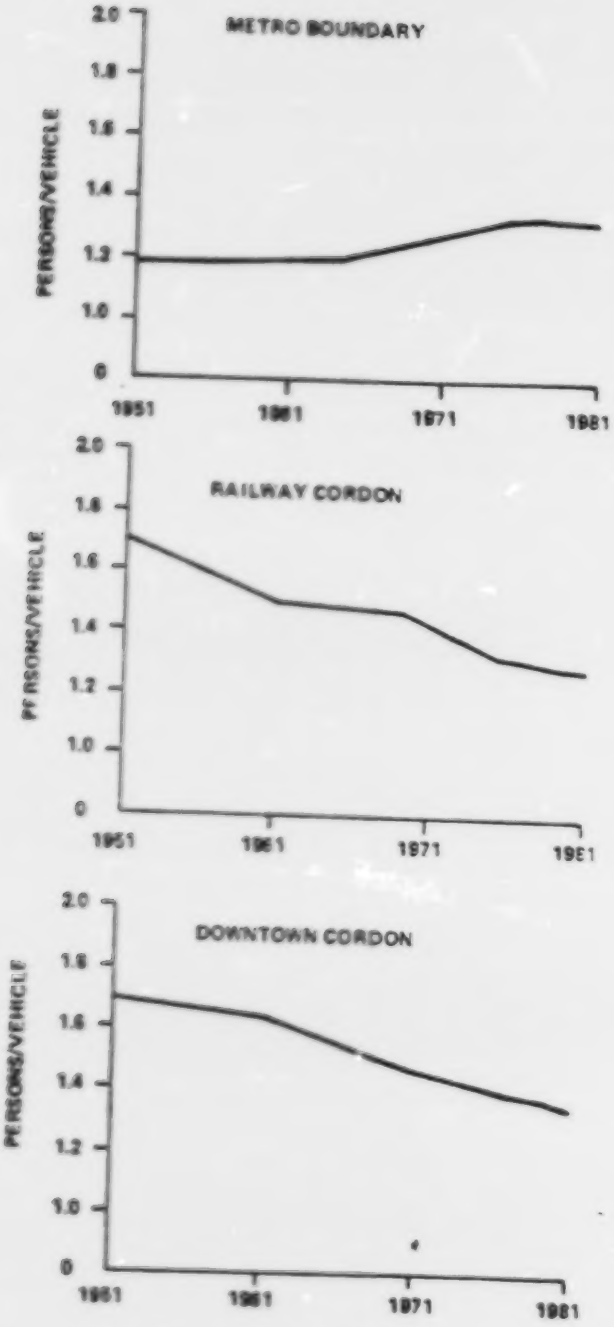
URBAN DOCUMENTATION CENTRE
RESEARCH UNIT FOR URBAN STUDIES
McMASTER UNIVERSITY
HAMILTON, ONTARIO

EXHIBIT 25

[illegible]

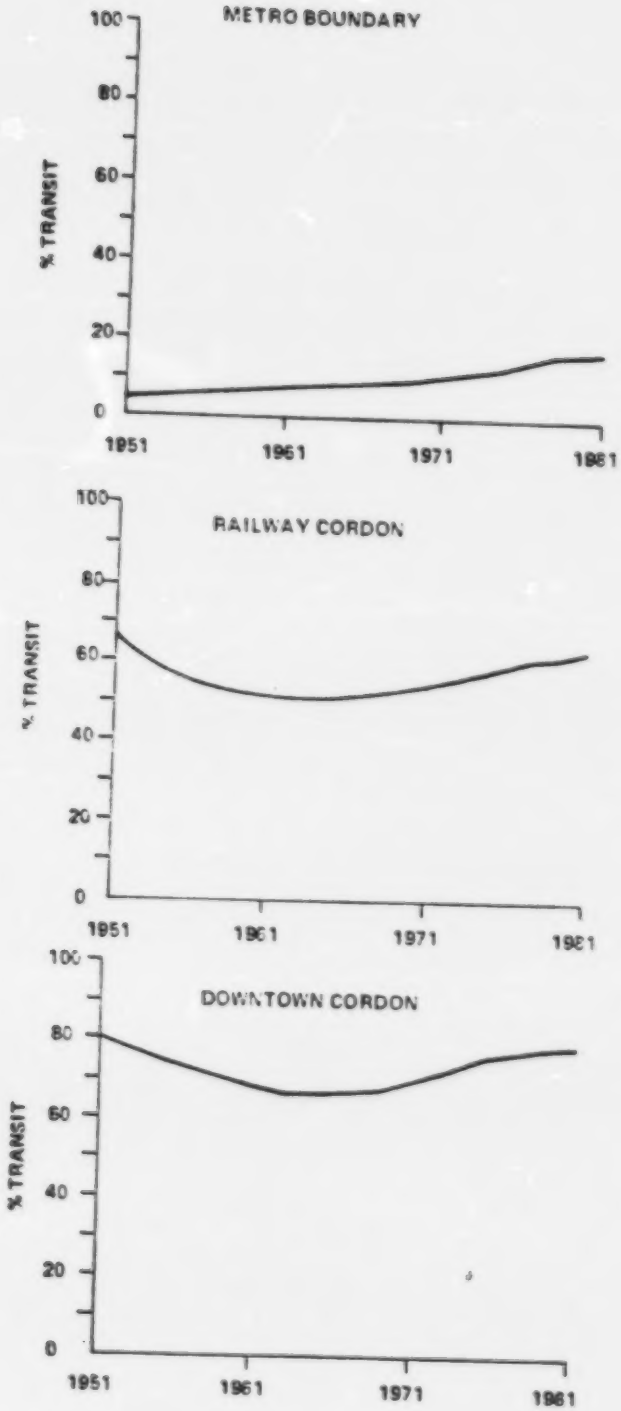
	[illegible]																			
	[illegible]																			
	West			North			East			Total			West		North		East		Total	
	1971	1981	Percent Increase	1971	1981	Percent Increase	1971	1981	Percent Increase	1971	1981	Percent Increase	1971	1981	1971	1981	1971	1981	1971	1981
Persons by Auto	177,629	312,477	68.6	599,353	980,000	93.7	91,966	97,970	96.7	868,948	1,390,447	60.2	89.0	90.5	91.7	92.0	84.0	88.6	90.5	90.0
Persons by Municipal Transit	15,887	27,459	97.9	7,982	14,990	150.2	2,991	5,899	131.7	26,860	48,348	81.7	7.2	8.8	8.1	7.7	6.7	9.2	6.8	8.8
Persons by GO Rail	6,990	11,987	62.6	-	548	-	2,659	4,856	56.7	9,649	16,991	80.8	1.6	0.1	0	0.1	1.6	3.2	2.9	3.2
Total Person Trips	198,496	351,888	91.1	606,346	995,738	96.8	97,696	98,625	98.8	905,398	1,455,210	91.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	[illegible]																			
Persons by Auto	150,956	159,921	5.5	381,956	951,006	24.7	75,675	81,951	10.5	609,911	1,191,118	11.1	80.1	86.7	81.7	95.5	79.6	82.6	77.2	90.0
Persons by Municipal Transit	40,781	99,824	11.7	67,378	90,967	42.5	14,399	27,011	93.6	119,122	199,892	54.0	20.5	26.9	10.1	21.6	19.6	27.5	20.9	25.7
Persons by GO Rail	7,170	13,750	89.6	-	1,589	-	4,812	7,877	93.6	11,790	21,626	83.5	1.6	0.6	0	0.1	5.6	6.1	1.9	2.8
Total Person Trips	187,891	236,795	10.1	349,890	448,388	28.5	92,268	115,199	24.9	638,981	739,736	27.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	[illegible]																			
Persons by Auto	112,635	125,207	6.0	184,884	183,327	-1.5	128,893	130,261	7.7	345,192	515,894	5.0	57.0	51.0	66.8	66.6	99.2	92.9	91.0	60.1
Persons by Municipal Transit	30,000	100,000	27.0	110,281	192,636	27.0	98,367	195,393	13.0	291,626	488,691	27.0	18.0	47.6	13.2	18.6	43.6	45.1	41.1	48.6
Persons by GO Rail	7,199	13,991	66.8	-	-	-	6,816	9,211	91.7	12,119	21,209	66.6	1.6	1.6	0	-	2.2	3.0	1.9	3.1
Total Person Trips	203,802	239,891	16.7	295,175	395,761	16.1	213,976	262,867	20.9	648,971	918,789	13.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[illegible]: Metro Garden Coast Program - 1971, Metro Toronto Planning Department, January 1980, and as corrected, January 1978.
Metro Garden Coast Program - 1981, Metro Toronto Planning Department, December, 1981



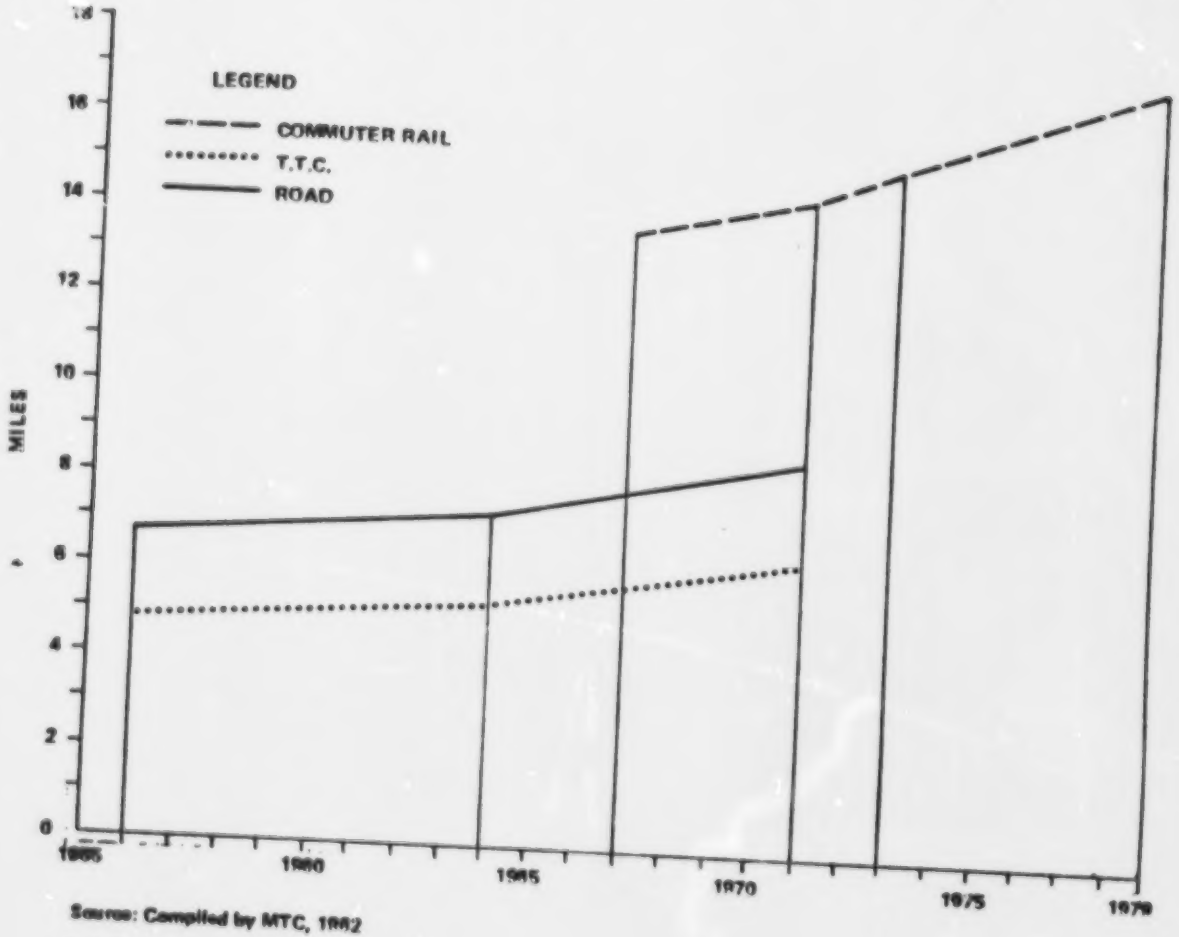
Source: Compiled by MTC, 1982

Exhibit 26/ Vehicle Occupancy 7 - 9 a. m. (Inbound)
At Selected Metro Toronto Cordons



Source: Compiled by MTC, 1982

Exhibit 27/ Modal Split 7 - 9 a.m. (Inbound)
At Selected Metro Toronto Cordons

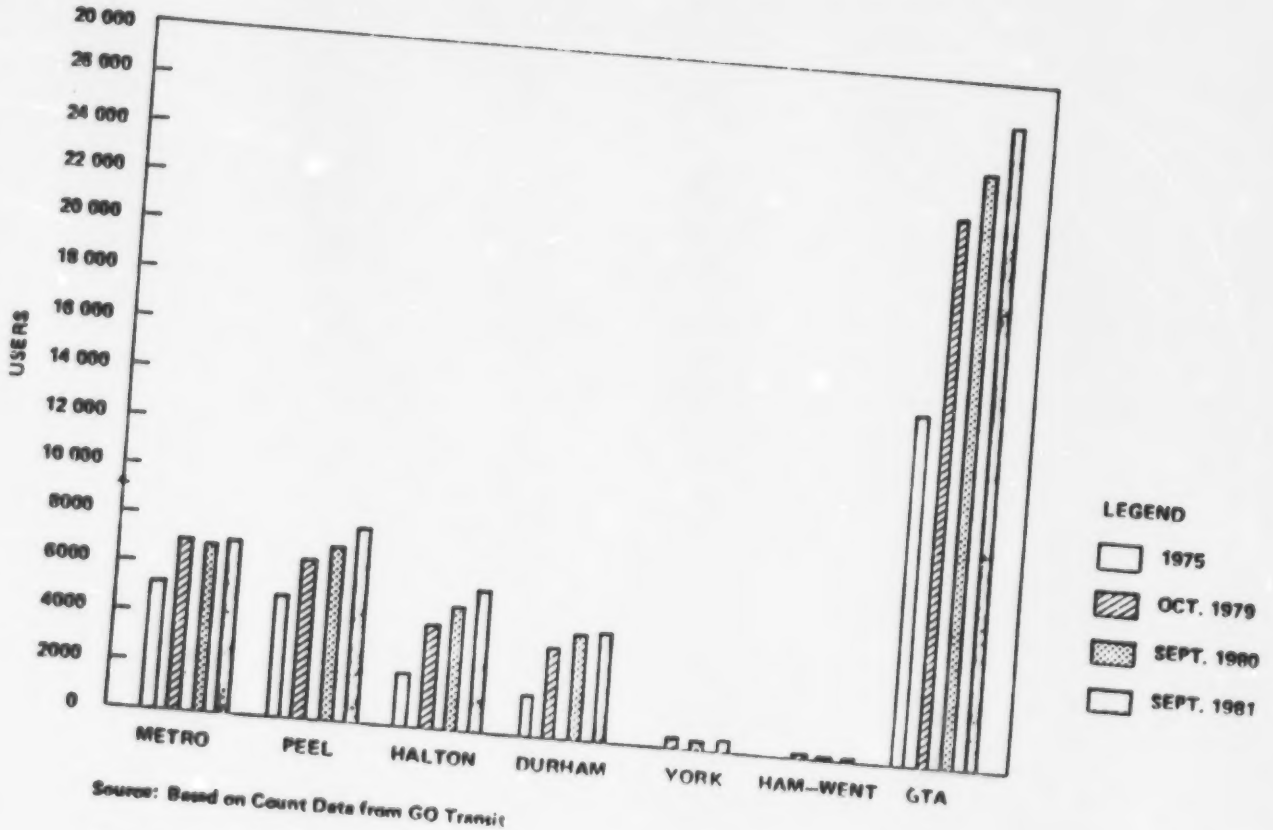


Source: Compiled by MTC, 1982

Exhibit 28/ Average Trip Length Variation – 1956 - 1979

Source: Compiled by MTC, 1982

Exhibit 29: Passenger Auto and Passenger Auto per Capita – Metro Toronto



Source: Based on Count Data from GO Transit

Exhibit 30/ GO Rail – Regional Usage, 1975 - 1981

HISTORICAL/PROJECTED G. T. A. POPULATION

1951, '61, '71, '81, ESTIMATES 2001

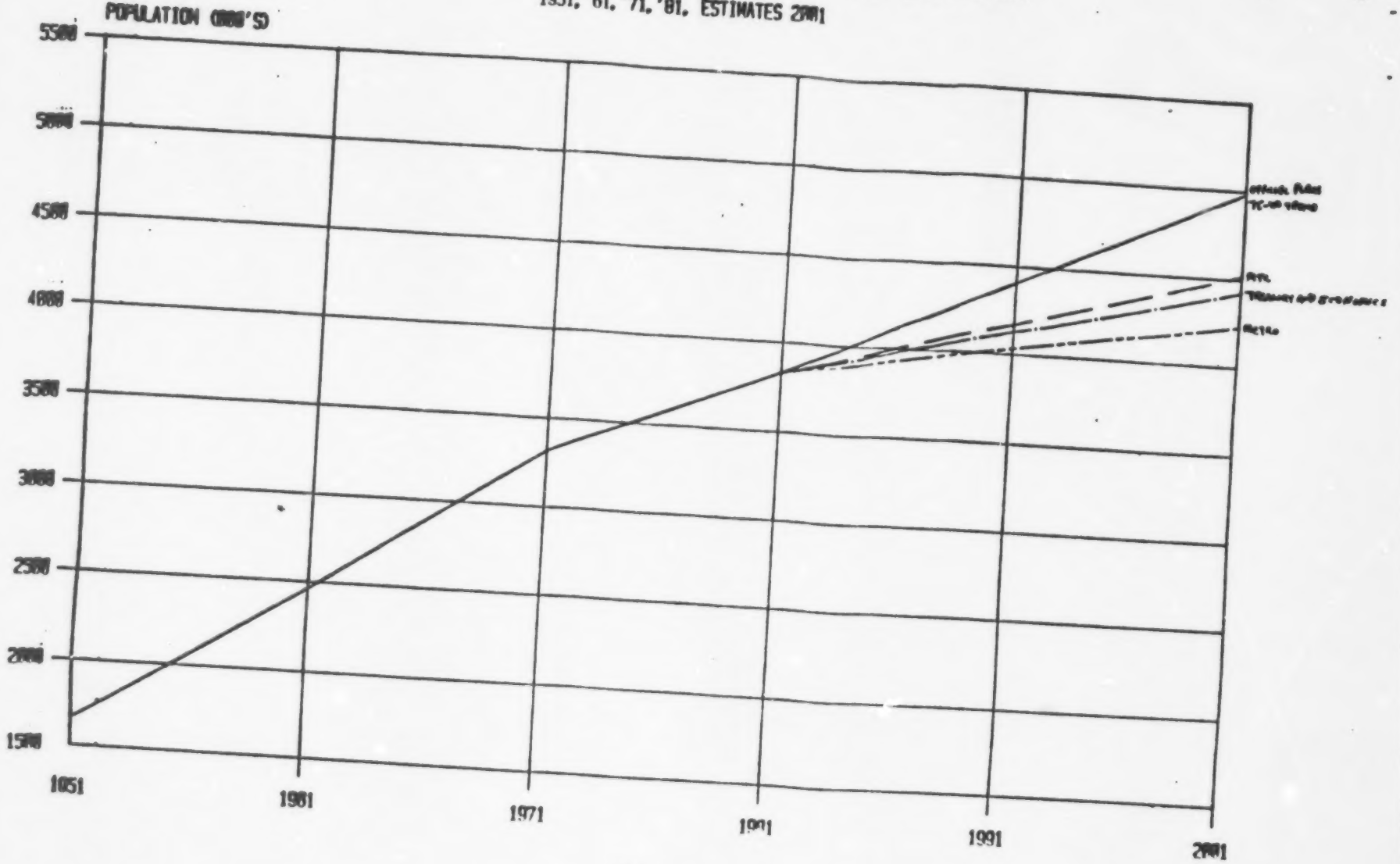


EXHIBIT 32

EXISTING GTA POPULATION PROJECTIONS
(000's)

1961 Population	ACTUAL					
1971 Population	2,464.6					
'61-'71 Growth - Absolute	3,324.2					
- %	859.6					
	34.9					
1981 Population	3,829.1					
'71-'81 Growth - Absolute	505.0					
- %	15.2					
FORECASTS	OP's (revised)	MTC	TREAS. & ECON. (1979)	METRO	76-81 TREND	TREAS. & ECON. (1982)
1991 Population	4,330	4,174[1]	4,191	4,255	4,308	3,963
'81-'91 Growth - Absolute	501	345	362	426	479	134
- %	13.1	9.0	9.5	11.1	12.5	3.5
2001 Population	4,926	4,519	4,425	4,643	4,787	4,040
'91-2001 Growth - Absolute	596	345	234	387	479	77
- %	13.8	8.3	5.6	9.1	11.1	1.9

SOURCES: 1971-1981 - Exhibits S1, S2 Working Paper A, June 1982.
1991-2001: "OP's" - from OP's, forecasts, and July 1982 updates.
: MTC, TREAS. & ECON (1979), Metro - Exhibit S2, TALC. Working Paper A, June 1981.
: 76-81 TREND - straight line trend based on Statistics Canada Census data.
: TREAS. & ECON. (1982) - updated forecast, March 1982.

EXHIBIT 33

GTA EMPLOYMENT PROJECTIONS
(000's)

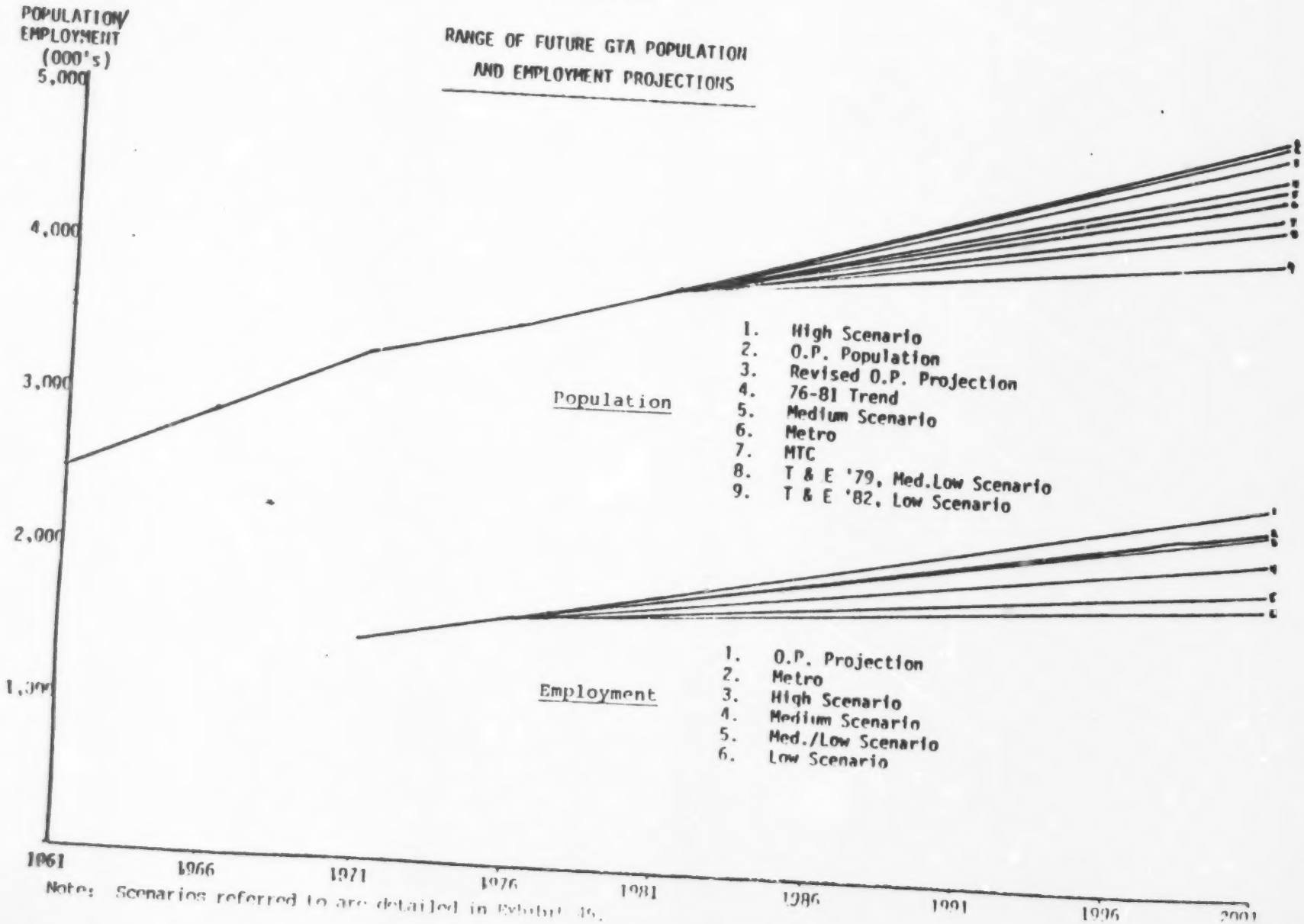
	ACTUAL			
1971 Employment	1,457.2			
FORECASTS	PLANNING DEPTS. (Revised)	METRO[1]	OEC ONTARIO[2] @ .46	ECONOSCOPE ONTARIO[3] @ .46
1981 Employment	1,691	1,907 *	1,910	1,925
'71-'81 Growth - Absolute		15.2		
- %				
1986 Employment	N/A	2,058	2,089	2,081[4]
'81-'86 Growth - Absolute			179	157
- %			9.4	8.1
1991 Employment	2,166	2,422	2,303[5]	N/A
'86-'91 Growth - Absolute		364	214	
('81-'91) - %		17.7	10.2	
2001 Employment	2,587[6]	2,672		
1991-2001				
Growth - Absolute	421	250	N/A	N/A
- %	19.4	10.3		
1976-2001				
Growth - Absolute	950.4	1,023.4	N/A	N/A
- %	57.7	62.1		

Sources:
[1]Based on Metro Planning Department estimate (prepared July '81) plus Hamilton/Wentworth Planning Department estimate. (1991 based on mid-point of '81-2001 estimates).
[2]Ontario Economic Council - based on October '81 computer run for Ontario factored at .46 historical GTA/ONTARIO proportion.
[3]ECONOSCOPE from Royal Bank of Canada, February 1982 estimate for Ontario factored at .46 historical GTA/ONTARIO proportion.
[4]ECONOSCOPE - based on '84-'85 level.
[5]Ontario Economic Council - based on '89-'90 trend.
[6]From Official Plans, Planning Departments July-October, 1982.

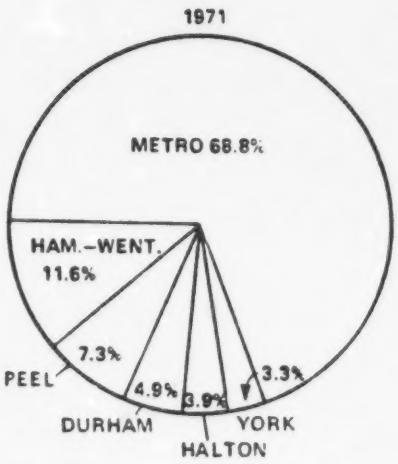
* Estimate prepared October, 1982.

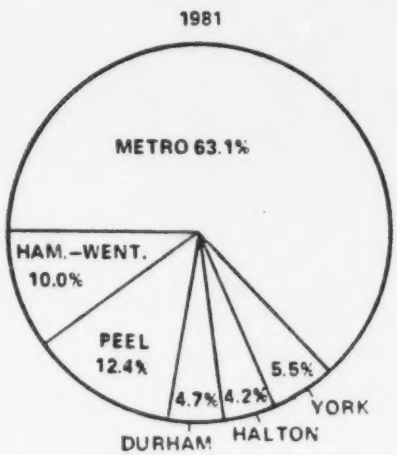
EXHIBIT 34

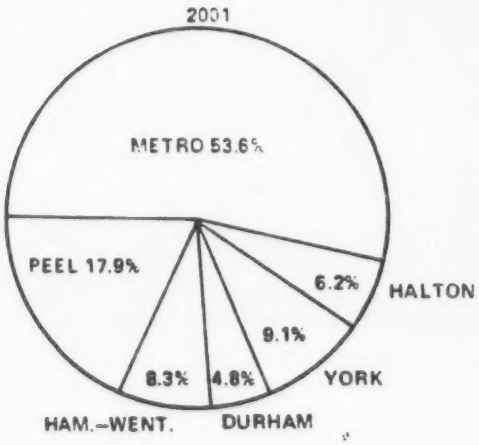
RANGE OF FUTURE GTA POPULATION AND EMPLOYMENT PROJECTIONS



Note: Scenarios referred to are detailed in Exhibit 35.







Source: Regional Planning Departments Estimates

Exhibit 35/ Regional Municipality Share of GTA Employment – 1971, 1981 & 2001

EXHIBIT 36

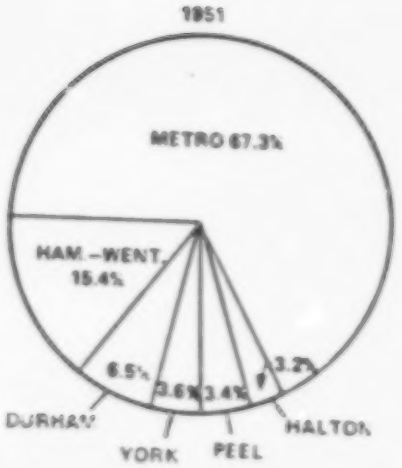
REGIONAL EMPLOYMENT COMPARISONS: 1971-2001

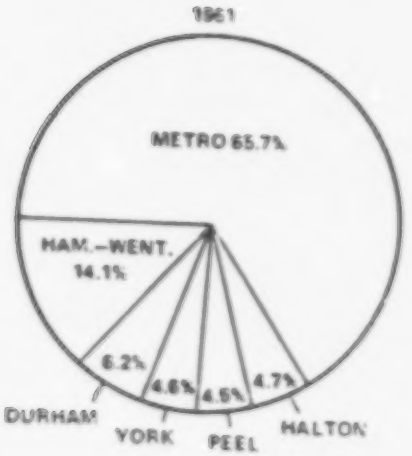
(000's)

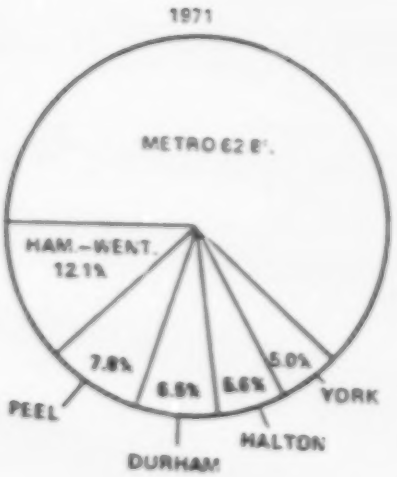
REGIONAL MUNICIPALITY	1971	1981 PLAN DEPTS.	71-81 GROWTH		REG'L MUNIC. 2001	71-2001 GROWTH		ULTIMATE	2001-ULTIMATE GROWTH	
			ABSOLUTE	%		ABSOLUTE	%		ABSOLUTE	%
DURHAM	71	90	19	26.8	125.1	54.1	76.2	265	140	112.0
HALTON	57	80	23	40.0	161.0	104.0	182.5	192	31	19.3
HAMILTON-WENTWORTH	168	190	22	13.0	228.0	60.0	35.7	290	62	27.2
METRO	994	1,187	193	19.0	1,387.0	393.0	39.6	1,525	138	9.9
PEEL	105	237	132	125.7	463.0	358.0	340.8	595	132	28.5
YORK	48	105	57	119.0	235.0	187.0	325.6	251+[1]	16+	6.8+
GREATER TORONTO AREA	1,443				2,599.0	1,156.0	80.1	3,118+	519+	19.9+

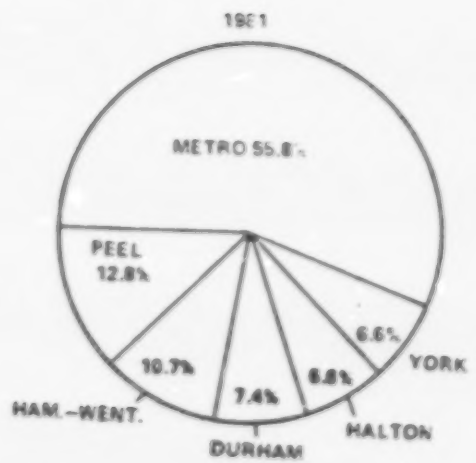
SOURCES: -1971, Exhibit S9, TALC Working Paper A, June 1982.
-1981 - Planning Department data where available, or Metro 1981 preliminary estimates
-2001 - Planning Department estimates and updates, July 1982.
-Ultimate - Planning Department estimates, or estimate based on 2001 employment/population ratio applied to 'ultimate population' estimate.

[1]Based on 2001 employment/population ratio.









Source: Exhibit 38

Exhibit 37: Historical Population Shares, 1951, 1961, 1971 and 1981

EXHIBIT 3A

REGIONAL POPULATION COMPARISONS: 1961-2001

(000's)

REGIONAL MUNICIPALITY	1961	1971	61-71 GROWTH ABSOLUTE	61-71 GROWTH %	1981	71-81 GROWTH ABSOLUTE	71-81 GROWTH %	1991	81-91 GROWTH ABSOLUTE	81-91 GROWTH %	2001	81-2001 GROWTH ABSOLUTE	81-2001 GROWTH %	91-2001 GROWTH ABSOLUTE	91-2001 GROWTH %	ULTIMATE	2001- ULTIMATE GROWTH ABSOLUTE	2001- ULTIMATE GROWTH %
DURHAM[10]	153.6	217.4	63.8	41.5	283.6	66.2	30.5	338.2	54.6	19.3	379.5	95.9	33.8	41.3	12.6	810	430.5+	113.4+
HALTON[11]	117.6	189.9	72.3	61.5	253.9	64.0	33.7	325.9[8]	72.1	28.4	398.0	144.1	56.8	72.1	22.1	473	75	18.8[9]
HAMILTON-WENTWORTH[11]	348.2	401.2	53.0	15.2	411.4	10.2	2.5	438.5	27.1	6.6	465.0	33.6	8.2	6.5	1.5	550	105	23.6[9]
METRO TORONTO	1,620.9	2,089.7	468.9	28.9	2,137.4	47.7	2.3	2,145.8	8.4	0.4	2,274.0	136.6	6.4	128.2	6.0	2,500	226	9.9[9]
PEEL	111.6	259.9	148.3	132.9	490.7	230.9	88.8	696.0[8]	205.1	41.8	901.0	410.3	83.6	205.0	29.5	1,129	228	25.3[9]
YORK	114.3	166.1	51.7	45.3	252.1	86.0	51.8	395.0[8]	143.0	36.2	538.0	285.9	113.4	143.0	36.2	575+	37+	6.9[9]
GREATER TORONTO AREA	2,466.1	3,324.2	858.0	34.9	3,829.1	505.0	15.2	4,339.2	510.3	13.3	4,835.5	1,108.4	30.0	596.1	13.8	6,037	1,101.5	22.3

SOURCES: [1]As per Exhibit S1, TALC Working Paper A, June 1982, as revised by Regional Planning Departments.

[2]Durham - Total designated residential acreage x population/acre as per information package July 1982, and revision from Durham Region.

[3]Halton - Population capacities as per Official Plan.

[4]Hamilton-Wentworth - Planning Dept., July 1982.

[5]Metro Toronto - Official Plan.

[6]Peel - Planning Dept., July 1982.

[7]York - Planning Dept., July 1982.

NOTE: [8]Midpoint Interpolations of 1981, 2001 data.

[9]Urbanized portion of York 'ultimate' based on York/Durham Servicing Scheme capacity of 467,000. Ultimate total will be in excess of the sum of 467,000 plus any increase in level of 2001 rural population of 118; i.e. 467,000 + 118,000 (2001 rural) = 575+

[10]Durham - Urban only - Rural 75,000 - Total 810,000

[11]1961 population of Halton and Hamilton-Wentworth adjusted to conform with current Municipal boundaries.

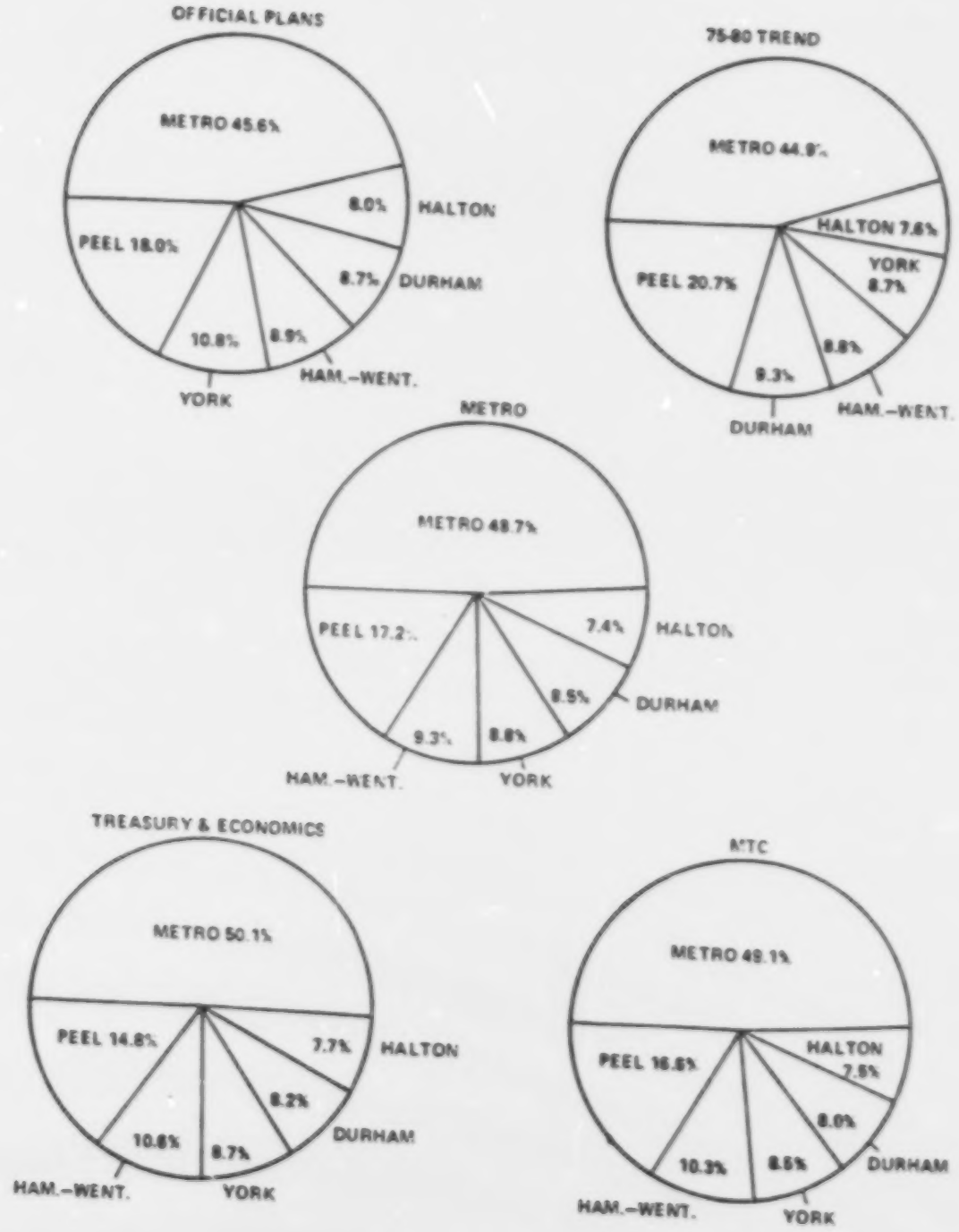


Exhibit 39 / Projected Share of Population (Yr. 2000)

EXHIBIT 40

SUMMARY OF RELATIVE GROWTH SHARES

REGIONAL MUNICIPALITY	PERCENT OF GTA GROWTH OCCURRING IN EACH RM		
	POPULATION		EMPLOYMENT
	1961 - 1981	1981 - 2001	1971 - 2001
DURHAM	9.5	7.9	4.6
HALTON	10.6	13.1	7.3
HAMILTON-WENTWORTH	4.6	3.1	5.8
METRO	37.6	12.5	34.5
PEEL	27.6	37.4	31.4
YORK	10.1	26.0	16.4
GTA TOTAL	100.0	100.0	100.0

SOURCES: Official Plans of Regional Municipalities supplemented by revised 2001 population and employment targets provided for the TALC Common Perspectives Study, July, 1982.

EXHIBIT 41

REGIONAL LAND USE COMPARISONS: CURRENT AND 2001

REGIONAL MUNICIPALITY		TOTAL[1] ACREAGE (000's)	RESIDENTIAL[2] ACREAGE	% RESIDENTIAL ACREAGE OF TOTAL	INDUSTRIAL[2] ACREAGES	% INDUSTRIAL ACREAGE OF TOTAL
DURHAM	- 1978	599	14,055	2.3	2,430	0.4
	- 2001		37,085	6.2	11,970	2.0
HALTON	- Current	243	N/A	N/A	5,809	2.4
	- 2001		N/A	N/A	N/A	N/A
HAMILTON-WENTWORTH	- 1975	277	20,232	7.3	5,649	2.0
	- 2001[4]		27,200[4]	9.8	8,330	3.0
METRO	- 1976	158	67,072	42.5	13,892	8.8
	- 2001		82,450	52.9	20,150	12.9
PEEL	- 1982	311	37,033	11.9	9,538	3.1
	- 2001		63,724	20.5	17,017	5.5
YORK	- 1982	425	21,240	5.0	4,320	0.1
	- 2001		41,875	9.9	8,425	2.0
GTA	- Current	2,011	175,000[3]	8.7	41,638	2.1
	- 2001		260,000[3]	12.9	72,000[3]	3.6

Acreage - not averages (excluding roads)

SOURCES: [1]Ministry of Municipal Affairs and Housing, Municipal Directory 1982.

[2]Information as available from Planning Departments, July, 1982; Metro December, 1982.

[3]Estimates based on available data plus the following assumptions for unavailable data:
- Metro 2001 acreage same as current.
- Acreage approximations for current Burlington to derive Halton total; average density levels applied to population and employment estimates to derive acreage estimates for Halton 2001.

[4]Based on ultimate population of 550,000 for Hamilton-Wentworth.

EXHIBIT 42
FUTURE DESIGNATED LAND USE

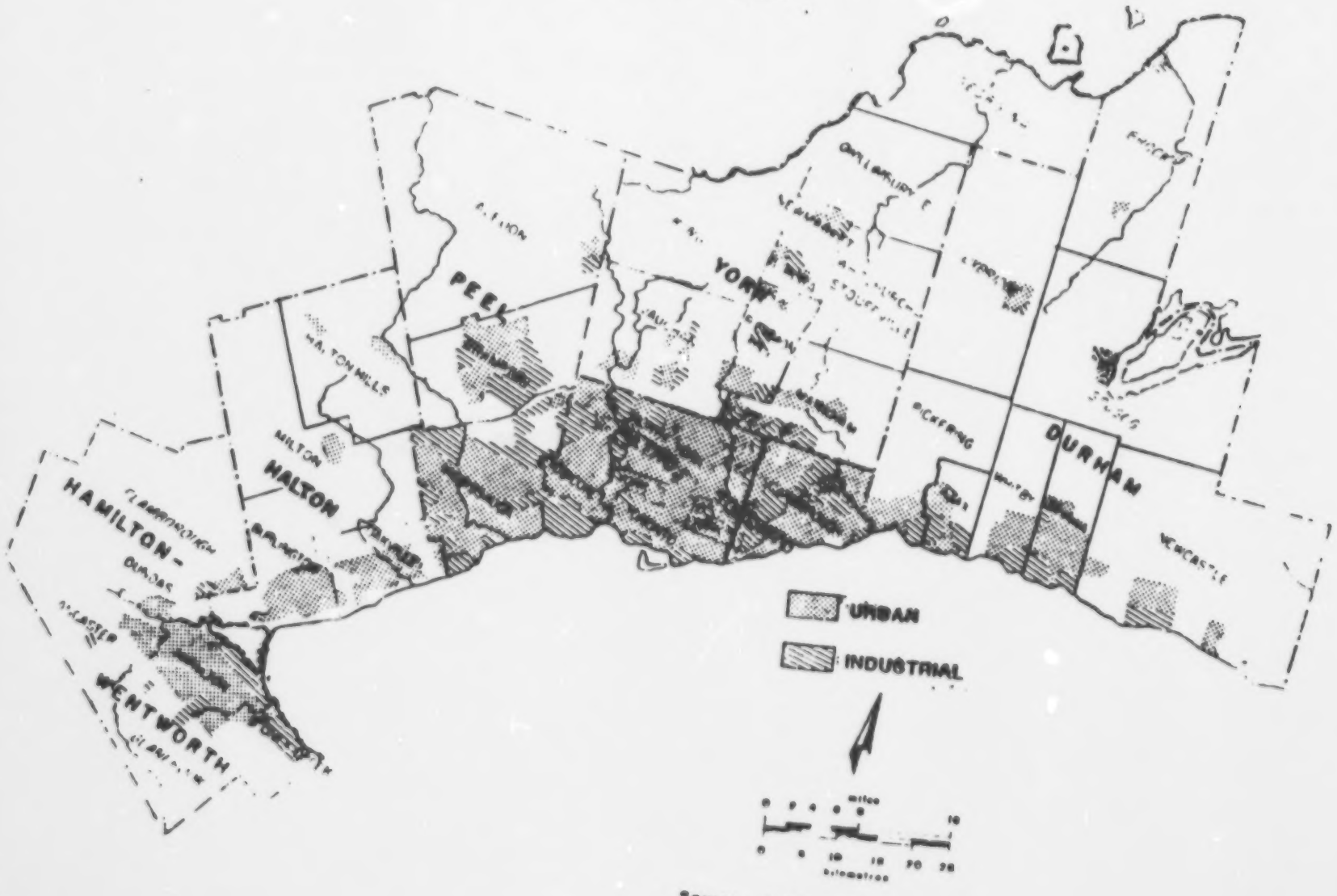


EXHIBIT 43

REGIONAL DEVELOPMENT DENSITY COMPARISONS: CURRENT AND 2001

REGIONAL MUNICIPALITY	CURRENT						2001/DESIGNATED					
	RESIDENTIAL			INDUSTRIAL			RESIDENTIAL			INDUSTRIAL		
	ACRES	POPULATION (000's)	DENSITY	ACRES	EMPLOYMENT (000's)	DENSITY	ACRES	POPULATION (000's)	DENSITY	ACRES	EMPLOYMENT (000's)	DENSITY
DURHAM	14,055 (1978)	188[1]	13.4 (1978)	2,430 (1978)	31 (Approx.)	12.8[1]	37,085[1]	379 (2001)	20.3 (ultimate)	11,970 (ultimate)	N/A	N/A
HALTON	N/A	N/A	13.1 (Oakville)	5,809	N/A	6.9 (Oakville)	N/A	N/A	15-20 (Oakville)	N/A	N/A	10.0 (Oakville)
HAMILTON -WENTWORTH	N/A	N/A	N/A	5,649 (1975)	N/A	13.6 (Approx.)	27,200 ultimate	549 ultimate	20.2 ultimate	8,330 (2001)	100	12.0
METRO	67,072 (1976)	2,124 (Census)	31.7[1]	13,892 (1976)	1,118	8.05	82,450	2,274	27.6 (Approx.)	20,150	13,897	6.9
PEEL	37,033 (1982)	496 (1982)	13.4[1]	9,538 (1982)	96 (1981)	10.1[1]	63,724 (2001)	884 (2001)	13.9[1]	17,017 (2001)	164 (2001)	9.6[1]
YORK	21,240 (1982)	177 (1982)	8.3 (1982)	4,320 (1982)	43 (1982)	10.1[1]	41,875 (2000)	420 (2000)	10.0 (2000)	8,425 (2000)	83 (2000)	9.9[1]
GREATER TORONTO AREA	N/A	N/A	21 (Approx.)	N/A	N/A	15 (Approx.)	N/A	N/A	20 (Approx.)	N/A	N/A	12 (Approx.)

SOURCES: Regional Planning Departments and background reports, July 1982.

NOTE: - Comparability of data is limited due to varying dates for base year (current) and 2001/Designated and differing definitions of land use.

- Population indicates best estimates of 'urban' population where available (not available for Hamilton-Wentworth).

- Attempt has been made to identify manufacturing and wholesaling employment for 'employment' levels; however, data not available in all cases. (Durham = Man., Halton = "industrial employees," H/W = 71-2000 trend line estimate of "manufacturing and warehousing," METRO = 1981 proportion of Man./Whole/ applied to 1976 total employees, Peel = Man./Whole., York = Man., Whole.,Constr. for 2001 and M, W, C plus Transportation for 1982).

[1]Calculated from other data provided.

EXHIBIT 44

HOUSING IMPLICATIONS OF POPULATION GROWTH ACCORDING TO REGIONAL OFFICIAL PLAN* BY REGIONAL MUNICIPALITY

REGIONAL MUNICIPALITY	1981 DU'S	1981 - 1991		1991 - 2001	
		GROWTH DU'S	YEARLY AVERAGE	GROWTH DU'S	YEARLY AVERAGE
Durham	91	26	2.6	18	1.8
Halton	82	37	3.7	34	3.4
Hamilton-Wentworth	147	13	1.3	16	1.6
Metro	776	60	6.0	74	7.4
Peel	151	80	8.0	79	7.9
York	77	55	5.5	50	5.0
GTA	1324	271	27.1	271	27.1

Source: Regional Planning Departments

Note: DU's in 000's.

* July, 1982.

EXHIBIT 45

REGIONAL POPULATION, EMPLOYMENT, LABOUR FORCE

REGIONAL MUNICIPALITY		(1) POPULATION (000's)	(2) JOBS * (000's)	(3) = (2)/(1) ACTIVITY RATIO: JOBS/POP'N	(4) PARTICIPATION RATE LABOUR FORCE / TOTAL POP'N	(5) EMPLOYMENT RATE EMPLOYED LABOUR FORCE / LABOUR FORCE	(6) = (1) x (4) x (5) EMPLOYED LABOUR FORCE
DURHAM	1971	217	70.7	0.33	0.41	.930	83.5
	1981	284	90.0	0.32	0.51	.946	136.4
	2001	379	125.1	0.33	0.51	.960	185.6
HALTON	1971	190	57	0.3	0.43	0.95	78
	1981	254	80	0.32	0.54	0.956	130.9
	2001	398	161	0.41	0.54	0.960	206.3
HAMILTON-WENTWORTH	1971	401	168	0.39	0.44	0.936	162
	1981**	411	192	0.47	0.54	0.950	210.8
	2001	445	228	0.51	0.54	0.960	230.7
METRO TORONTO	1971	2,090	994	0.48	0.49	0.928	954
	1981	2,137	1,062	0.50	0.57	0.959	1,157.7
	2001	2,274	1,387	0.61	0.57	0.960	1,244.3
PEEL	1971	260	105	0.40	0.44	0.947	108
	1981	491	237	0.48	0.56	0.965	263.3
	2001	901	463	0.51	0.56	0.960	484.4
YORK	1971	166	47.7	0.29	0.42	0.946	66
	1981	252	106	0.42	0.53	0.967	129.2
	2001	538	235	0.44	0.53	0.960	273.7
TOTAL	1971	3,324	1,443	0.44	0.47	0.932	1,451
	1981	3,829	1,766	0.46	0.55	0.962	2,027.8
	2001	4,935	2,587	0.52	0.55	0.967	2,525.0

* Full time (not total) Employment

**Estimated Participation and Employment Rate.

SOURCE: Official Plans of the Regional Municipalities, revised Population and Employment Targets provided for the TALC Common Perspectives Study, July, 1982.

EXHIBIT 46

GTA GROWTH SCENARIOS - QUALITATIVE DESCRIPTIONS

External Factors	1.	2.	3.	4.
Jobs/Income Growth	High	Medium	Medium/Low	Low
Interest Rates/Inflation	Low	Medium	High	High
Net Immigration	High	Medium	Low	Low
Energy Prices	Medium	Medium	High	Low
Automation/Communications Impact	High	Medium	Medium	Low
Descriptors				
Employment/Population Growth	High	Medium	Medium/Low	Low
Development Densities	Low	Medium	High	Medium/High
Exurban Development	High	Medium	Low	Medium/Low
Inter-Regional Commuting	High	Medium/High	Low	Low
Other Impacts				
Population Aging	Medium	High	High	High
Average Household Size	Low	Medium	High	Medium/High

EXHIBIT 47

GTA GROWTH SCENARIOS - BROAD QUANTIFICATION (2001)

	1. High	2. Medium	3. Medium/Low	4. Low
Population	5.00M	4.70M	4.40M	4.04M
Participation Rate	0.51	0.51	0.51	0.51
Labour Force	2.55M	2.40M	2.24M	2.06M
Employment/Labour Force	0.95	0.925	0.915	0.90
Employment	2.42M	2.22M	2.05M	1.85M
Urban Density	Low	Medium	High	Medium/High
Household Size	2.0	2.5	3.0	2.8
No. of Households	2.50M	1.88M	1.47M	1.44M
Net Migration	35,000	25,000	13,000	0
Inter-Regional Commuting	High	Medium	Low	Low

POOR

QUALITY

ORIGINAL